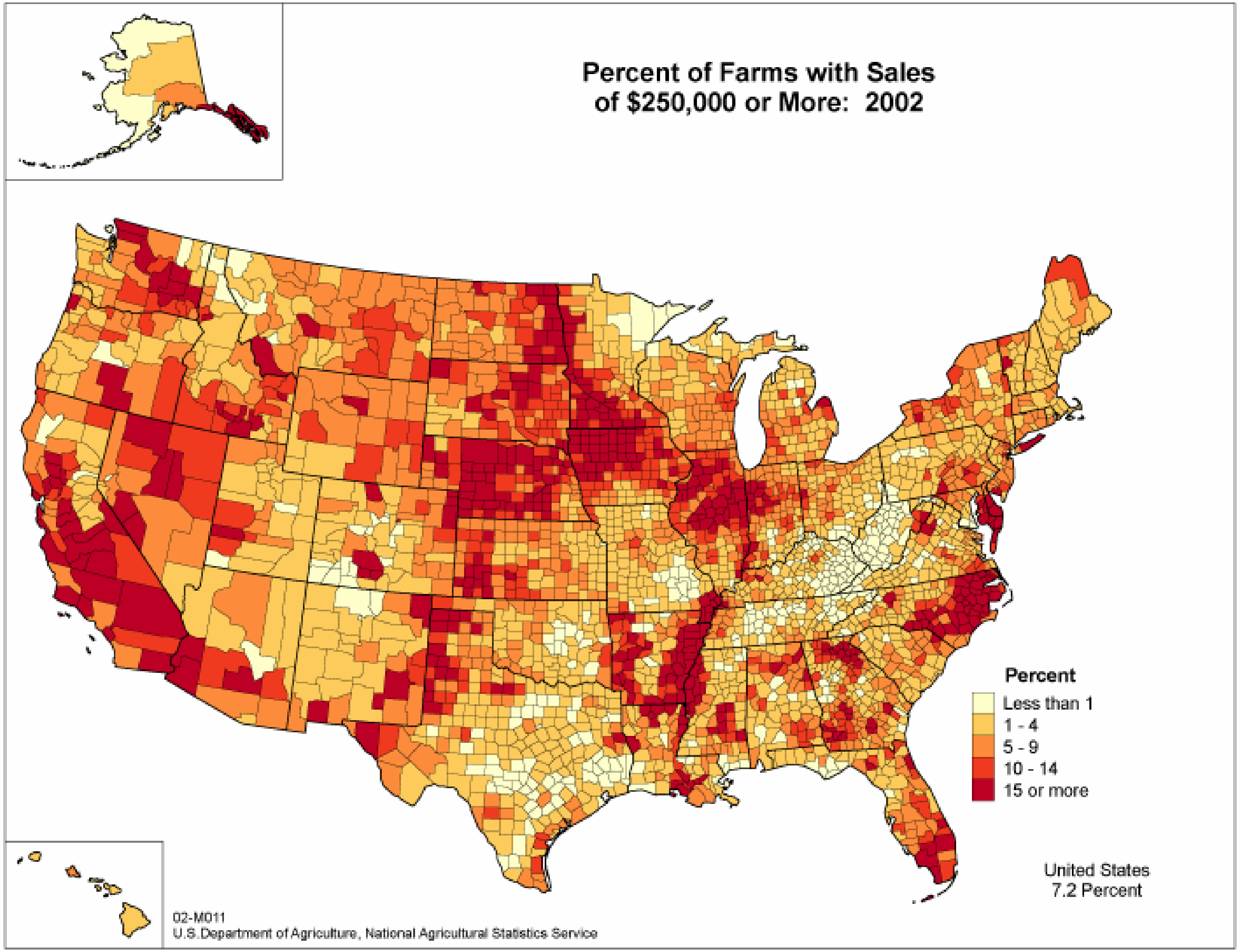
Agricultural Trends and Opportunities

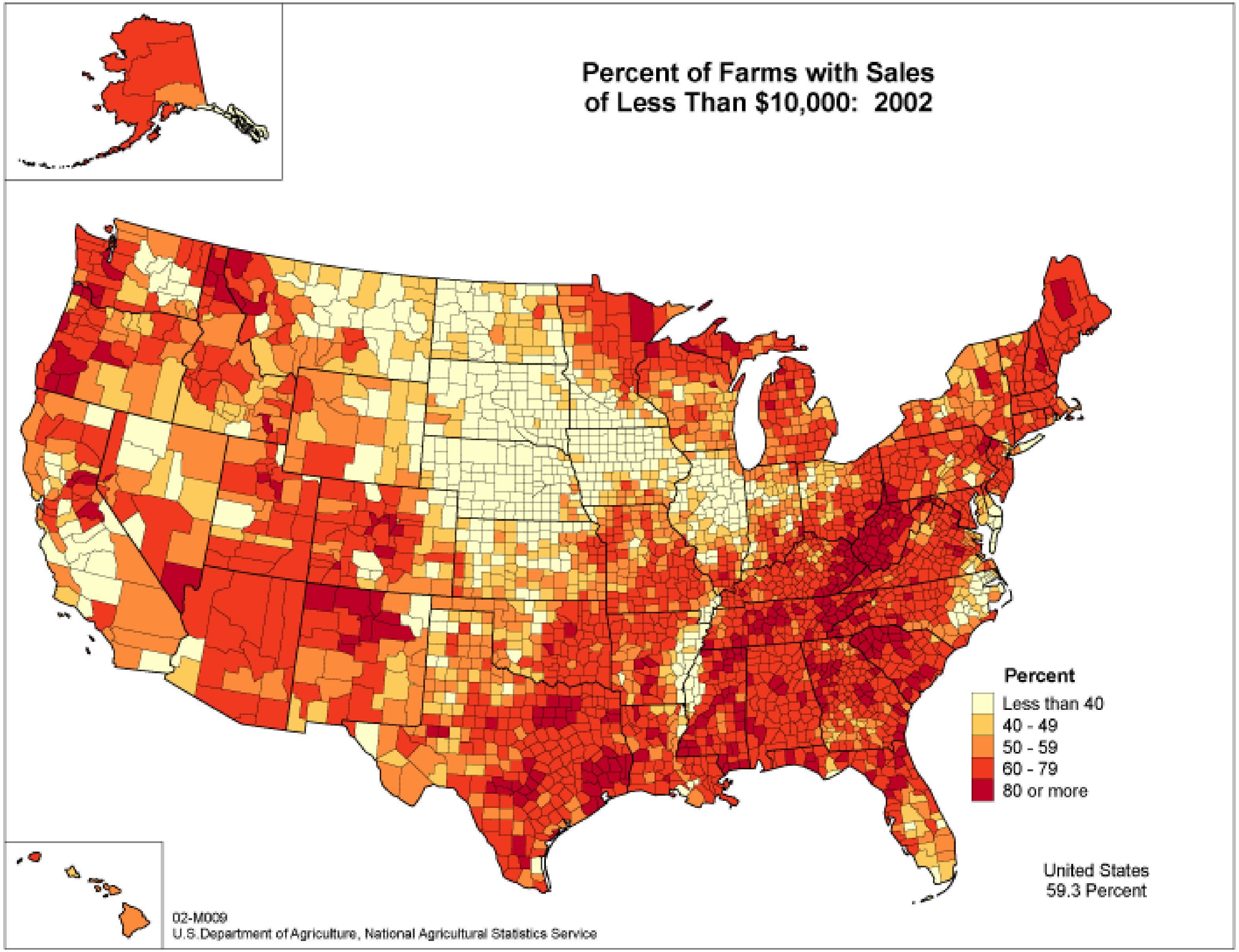
Presented to Gov's Biobased Industry Consortium
Oct. 17, 2005

Will Hughes, Administrator,
Division of Ag Development

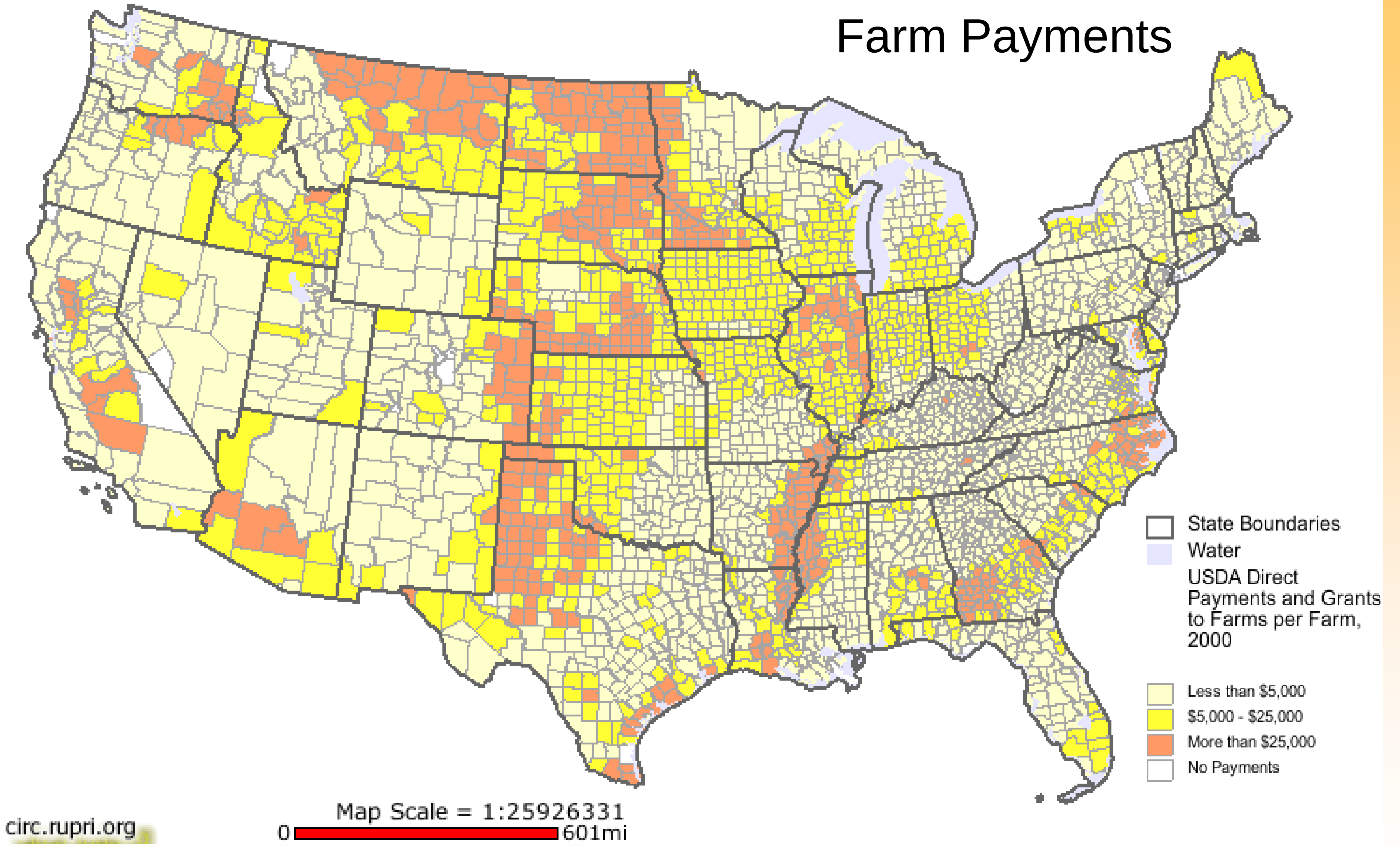
Biobased Agriculture

- Large Biomass Potential
- Critical Issues
  - Profitability
  - Farm Structure- WI vis a vis nationally
  - Land use (farms and forests)
  - Deployment of Science/Technology
  - Government Policy
- Need for “Third Rail” of Demand

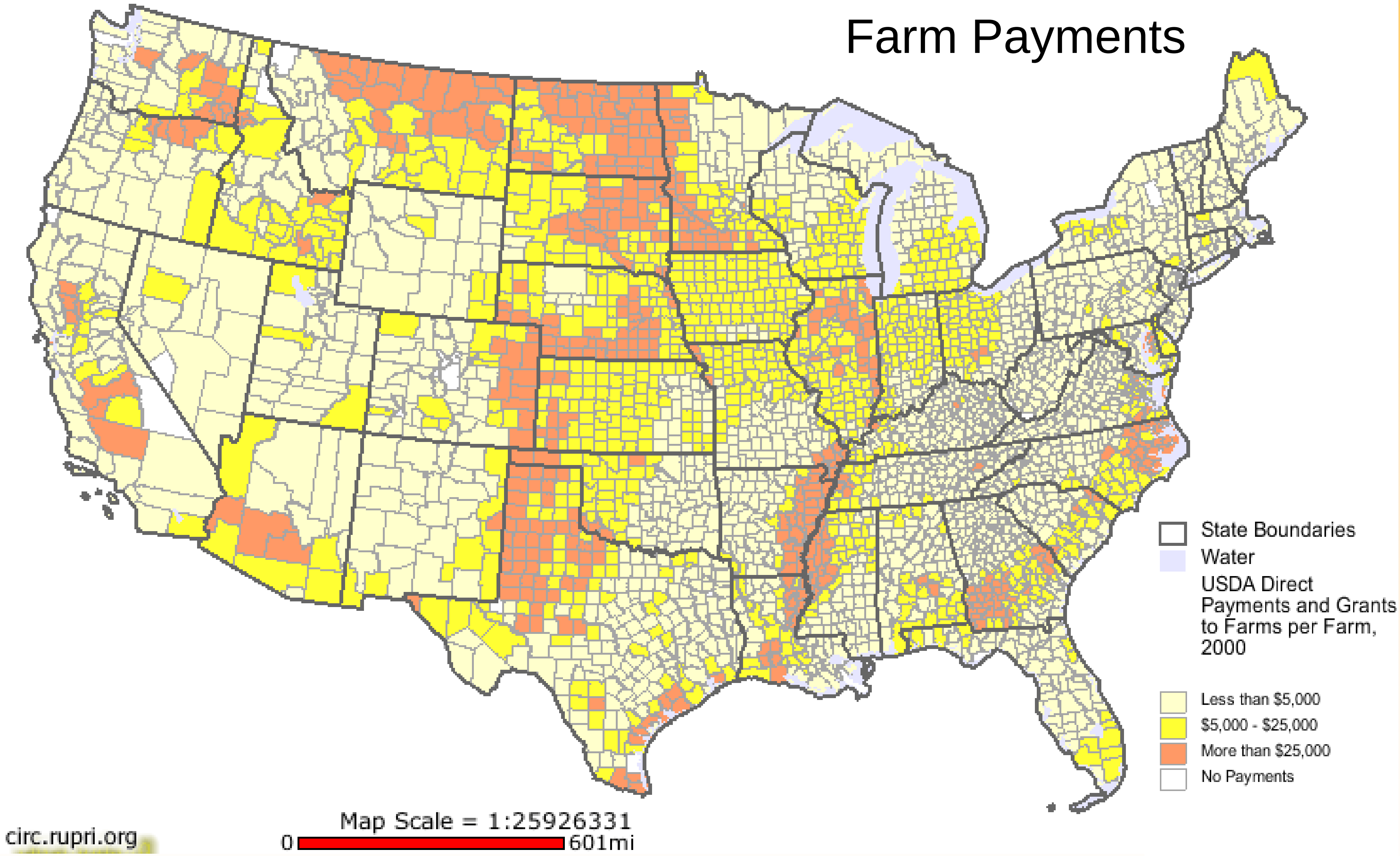

Percent of Farms with Sales
of $250,000 or More: 2002
Percent
Less than 1
1 - 4
5 - 9
10 - 14
15 or more
United States
7.2 Percent
02-M011
U.S.Department of Agriculture, National Agricultural Statistics Service


Percent of Farms with Sales
of Less Than $10,000: 2002
Percent
Less than 40
40 - 49
50 - 59
60 - 79
80 or more
United States
59.3 Percent
02-M009
U.S.Department of Agriculture, National Agricultural Statistics Service

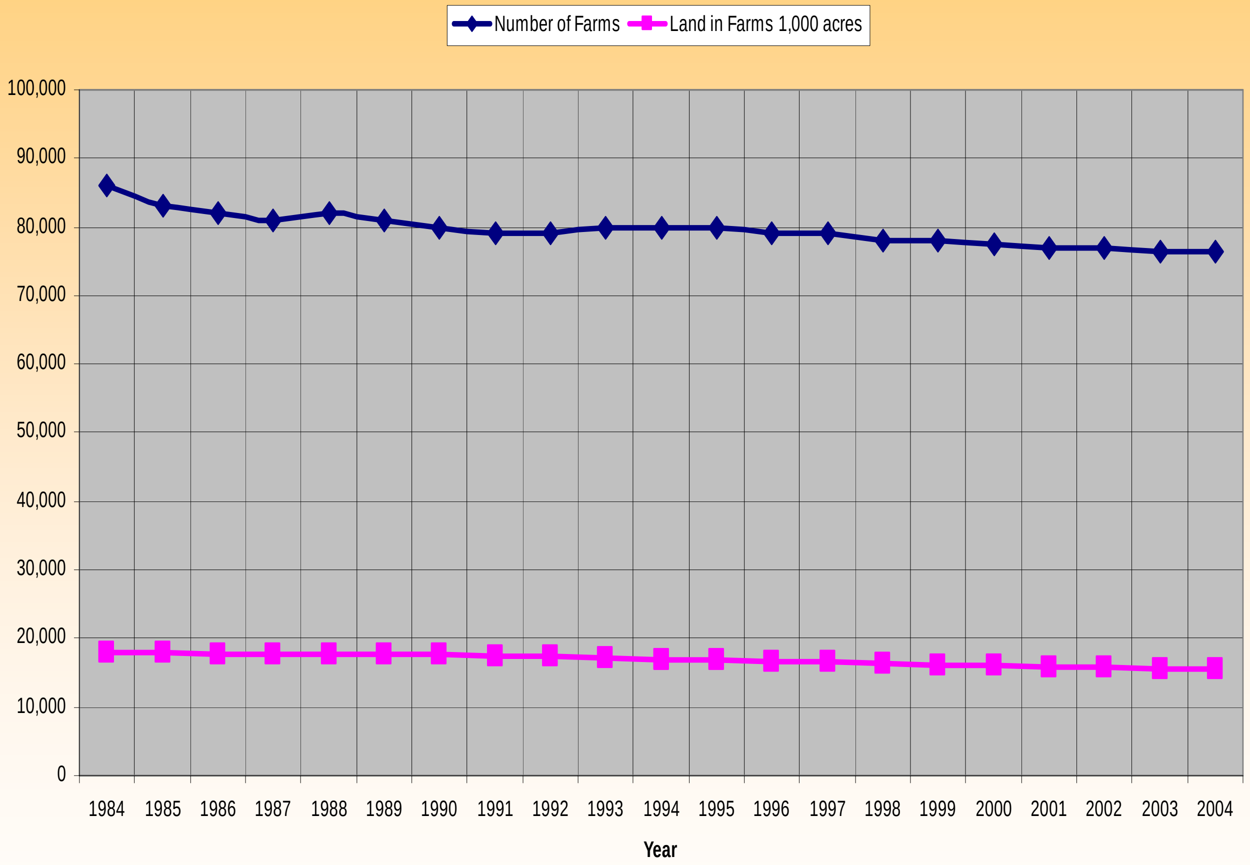
Farm Payments



Farm Payments



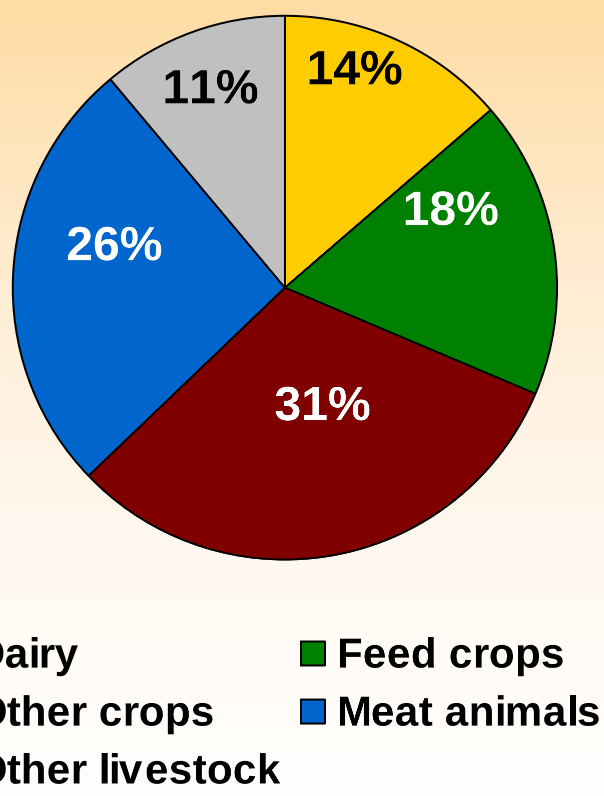
Wisconsin: Number of Farms & Land in Farms



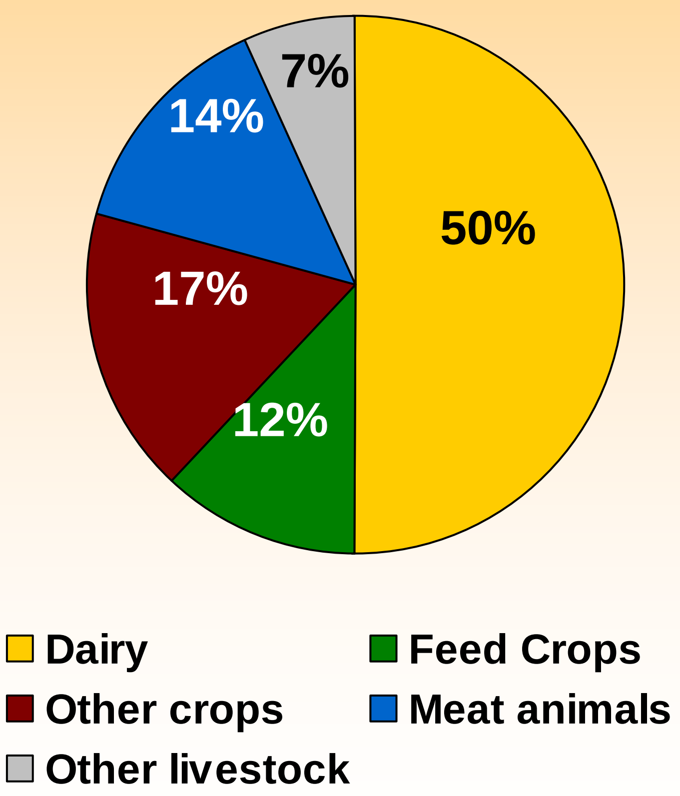
Key Trends

Cash Receipts by Crop

Minnesota



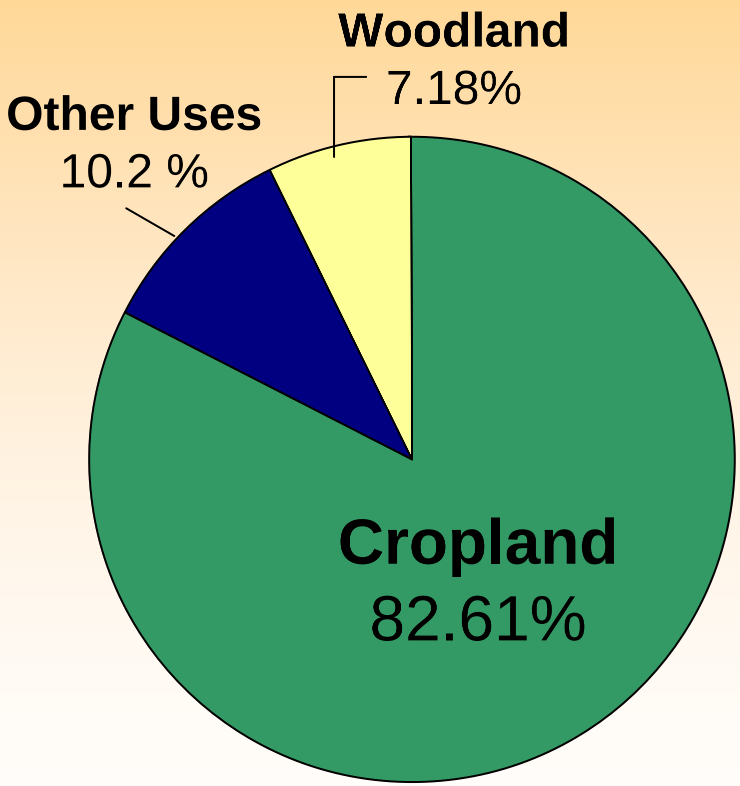
Wisconsin



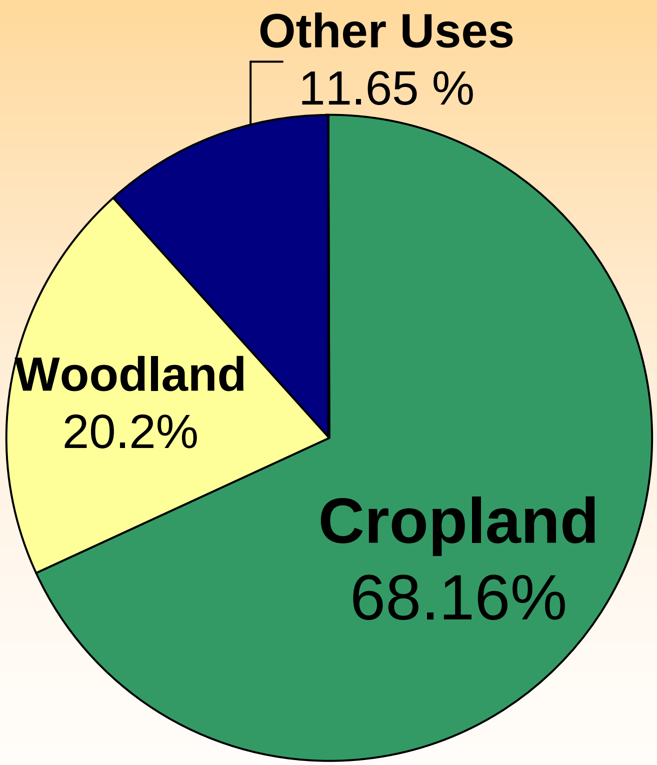
Key Trends

Land in Farms

by Type of Land

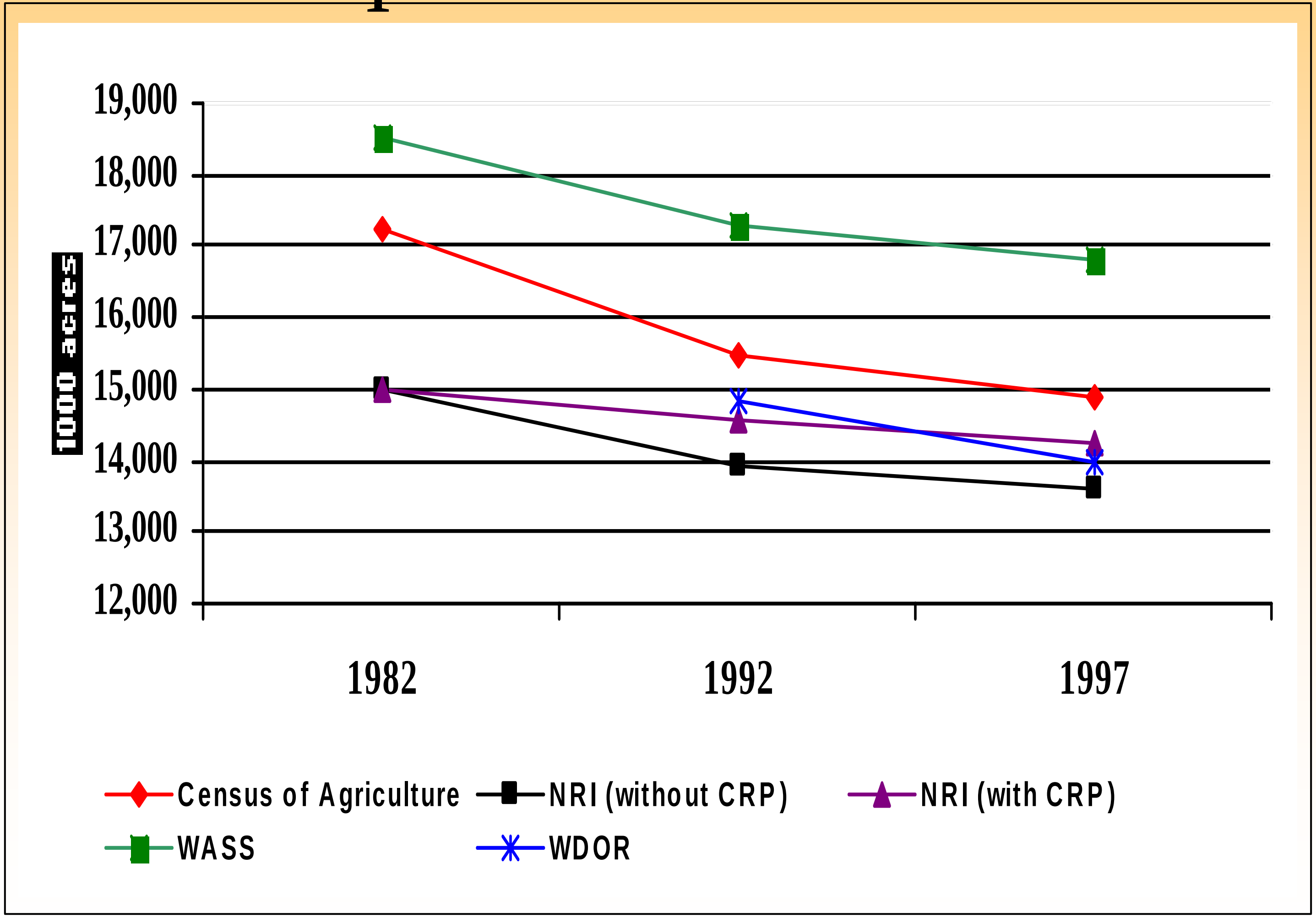


Minnesota



Wisconsin

WWi Farm Land



Sector Shares

Wisconsin's Top Commodities

(Sales by dollar value, 2002)

1. Milk	$2.66 billion
2. Cattle & calves	$745 million
3. Corn	$565 million
4. Soybeans	$212 million
5. Potatoes	$199 million
6. Greenhouse & Nursery	$146 million
7. Cranberries	$103 million
8. Hogs	$93 million
9. Eggs	$49 million
10. Broilers	$43 million

Sector Shares

	1992		2003	
	% of U.S. Sector Share	Acres (millions)	% of U.S. Sector Share	Acres (millions)
Milk	15.9		13.1	
Hay	4.1	2.8	2.8	2.1
Corn for Silage	11.9	.86	13.3	.88
Cattle	3.9		3.5	
Sheep	1.0		1.4	
Hogs	2.0		0.8	
Trout	0.7		0.9	
Corn for Grain	3.2	2.95	3.6	2.85
Soybeans	1.0	.69	1.9	1.67
Potatoes	6.1	.07	7.2	0.8
Cranberries	31.9	.01	58.3	.02

Market Share

Percent of National Total

	1990		2003	
	Wisconsin	**Minnesota**	**Wisconsin**	**Minnesota**
All Commodities	3.36	4.07	**2.72**	4.06
Livestock & Products	5.09	4.21	**3.85**	3.86
Dairy Products	15.94	6.49	**13.89**	4.92
Hogs	2.10	8.39	1.84	11.92
Cattle and Calves	2.22	2.35	1.35	2.19
Poultry/Eggs	1.12	3.37	1.01	2.94
Crops	1.43	3.92	1.60	4.25
Corn	2.06	8.01	3.38	9.08
Soybeans	0.79	8.90	1.37	9.97

Sector Shares

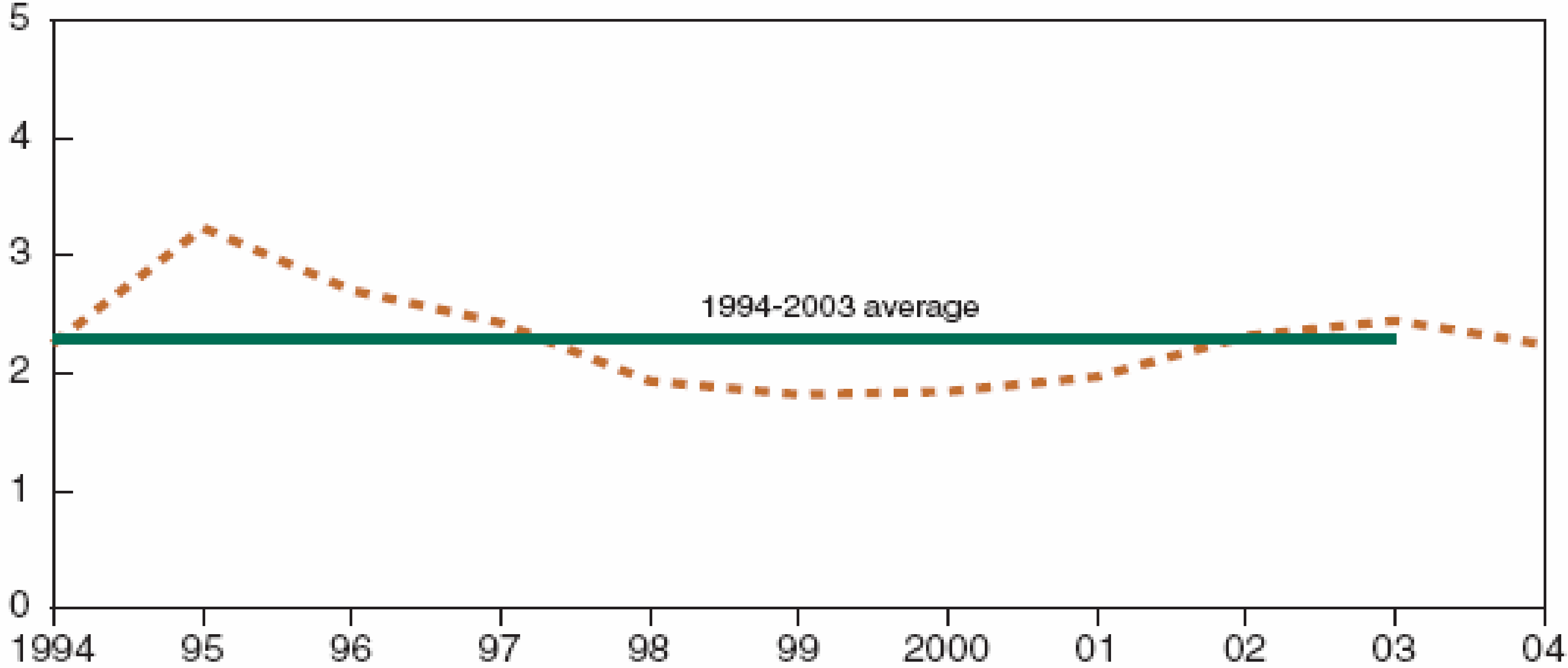
Wisconsin Agriculture Macroview

	1992	2003
Cash Receipts	$5.66 billion	$5.87 billion
Land in Farms	17.5 million acres	15.6 million acres
Receipts/Acre	$323	$376

Market prices

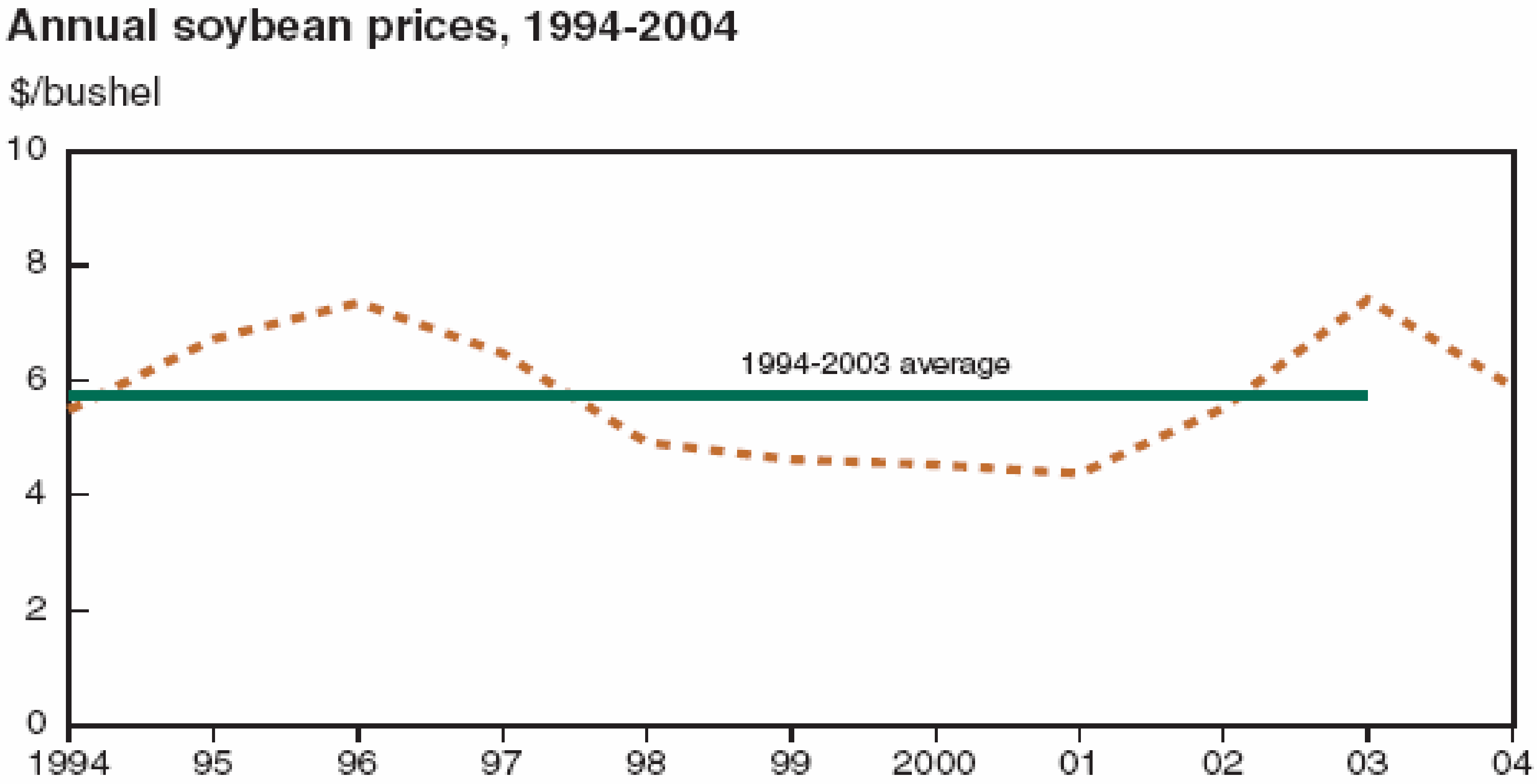
Annual corn prices, 1994-2004

$/bushel



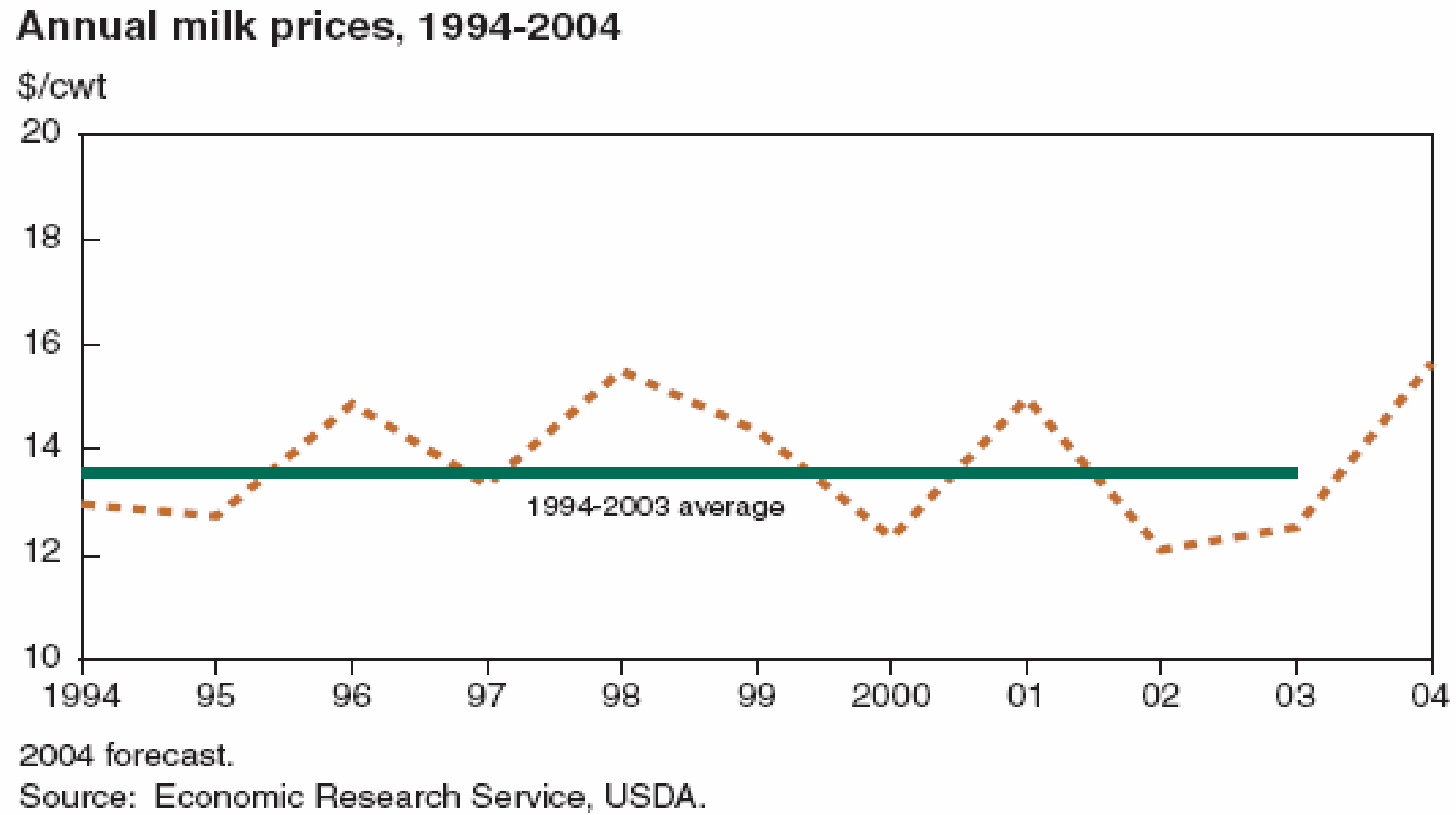
2004 forecast.
Source: Economic Research Service, USDA.

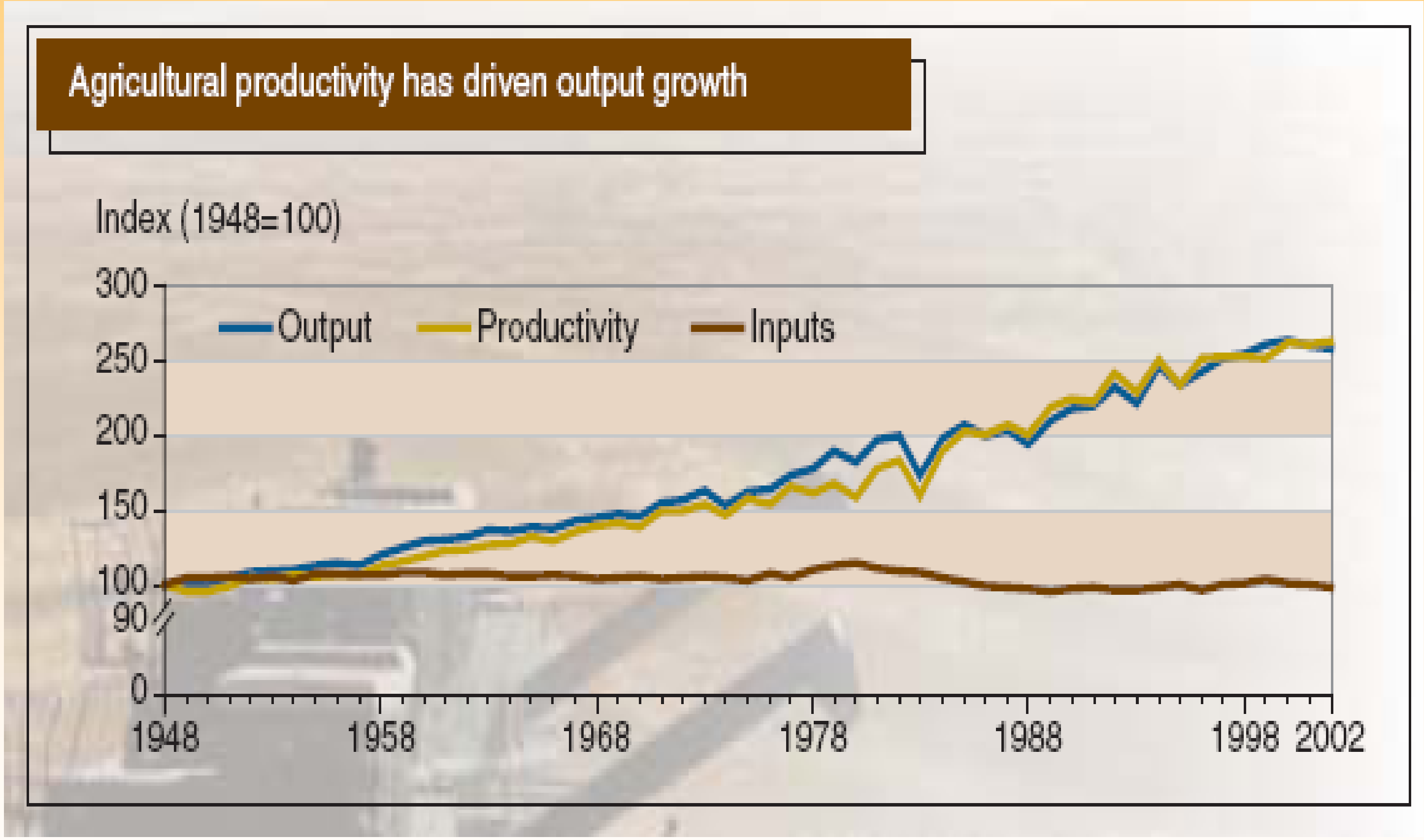
Market prices



2004 forecast.
Source: Economic Research Service, USDA.

Market prices

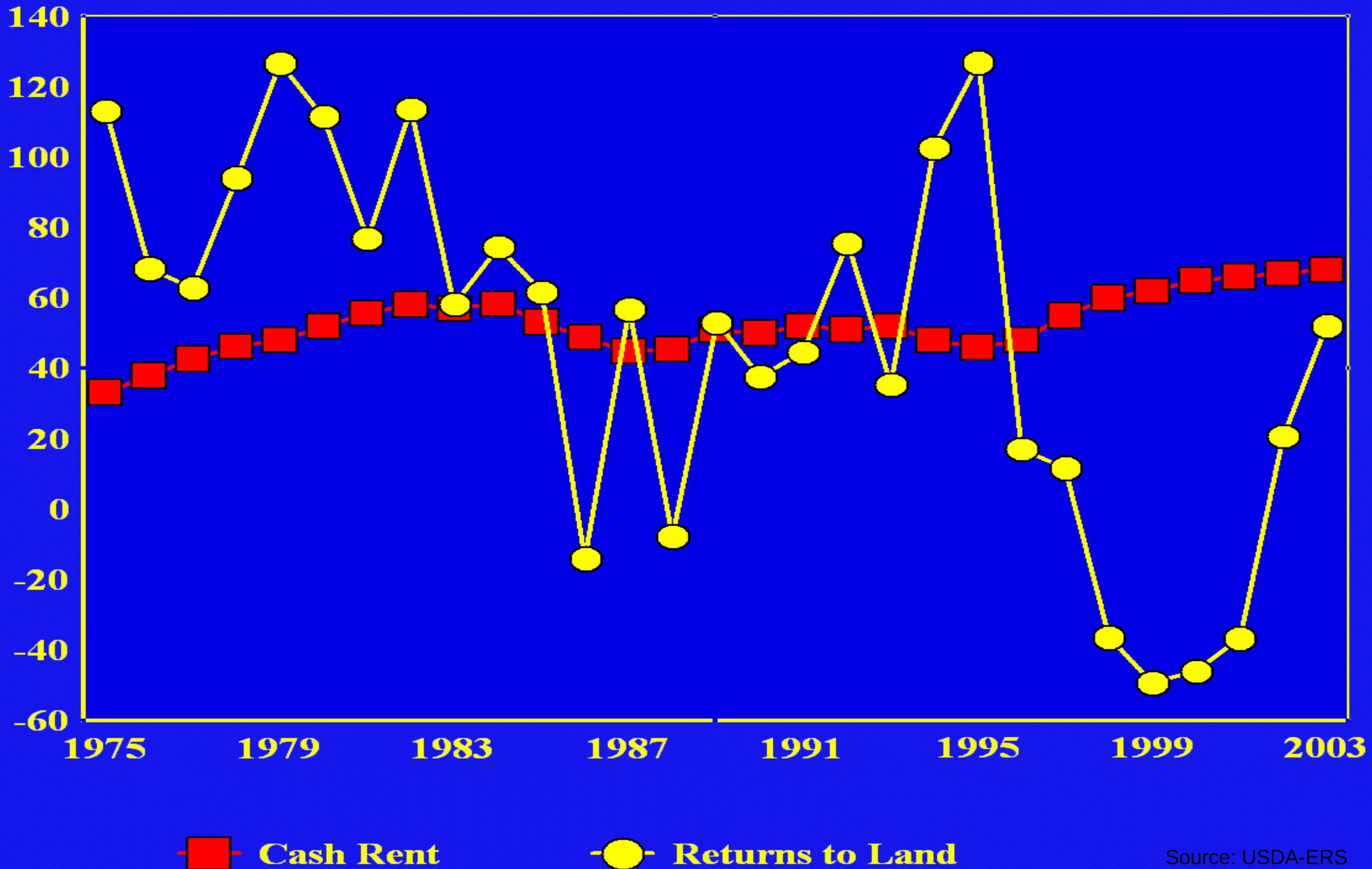




Agricultural productivity has driven output growth
Index (1948=100)
300
250
200
150
100
90
0
Output
Productivity
Inputs
1948
1958
1968
1978
1988
1998
2002

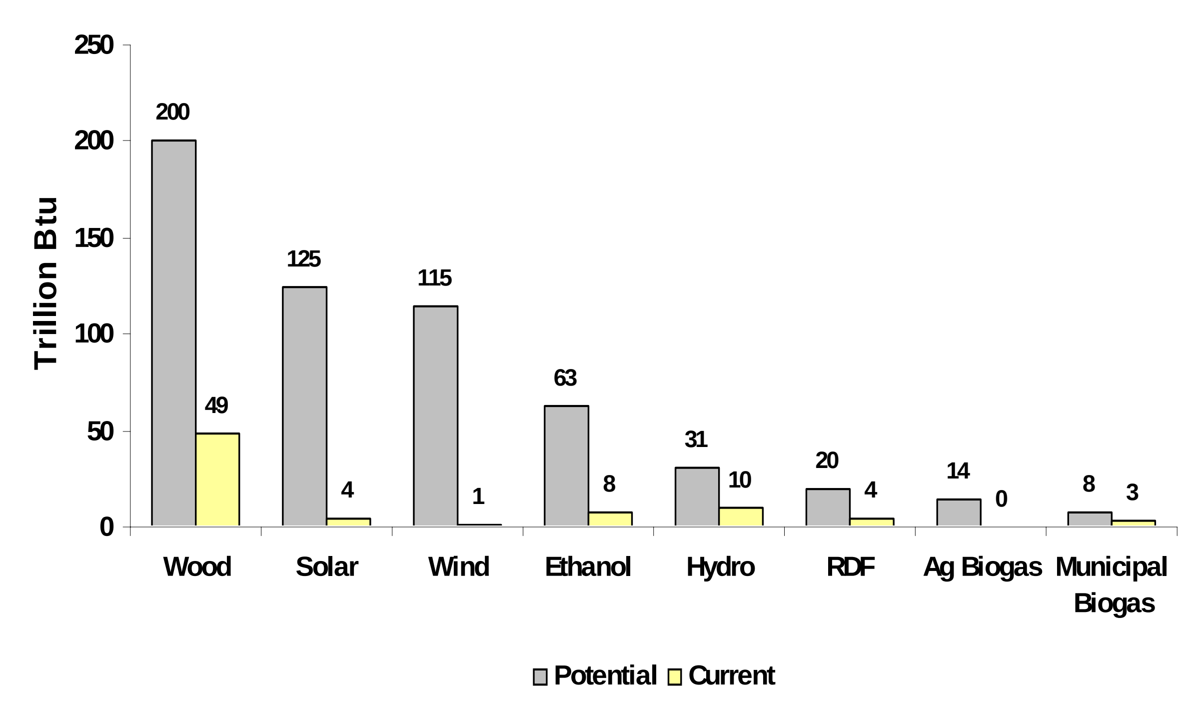
Returns to Land

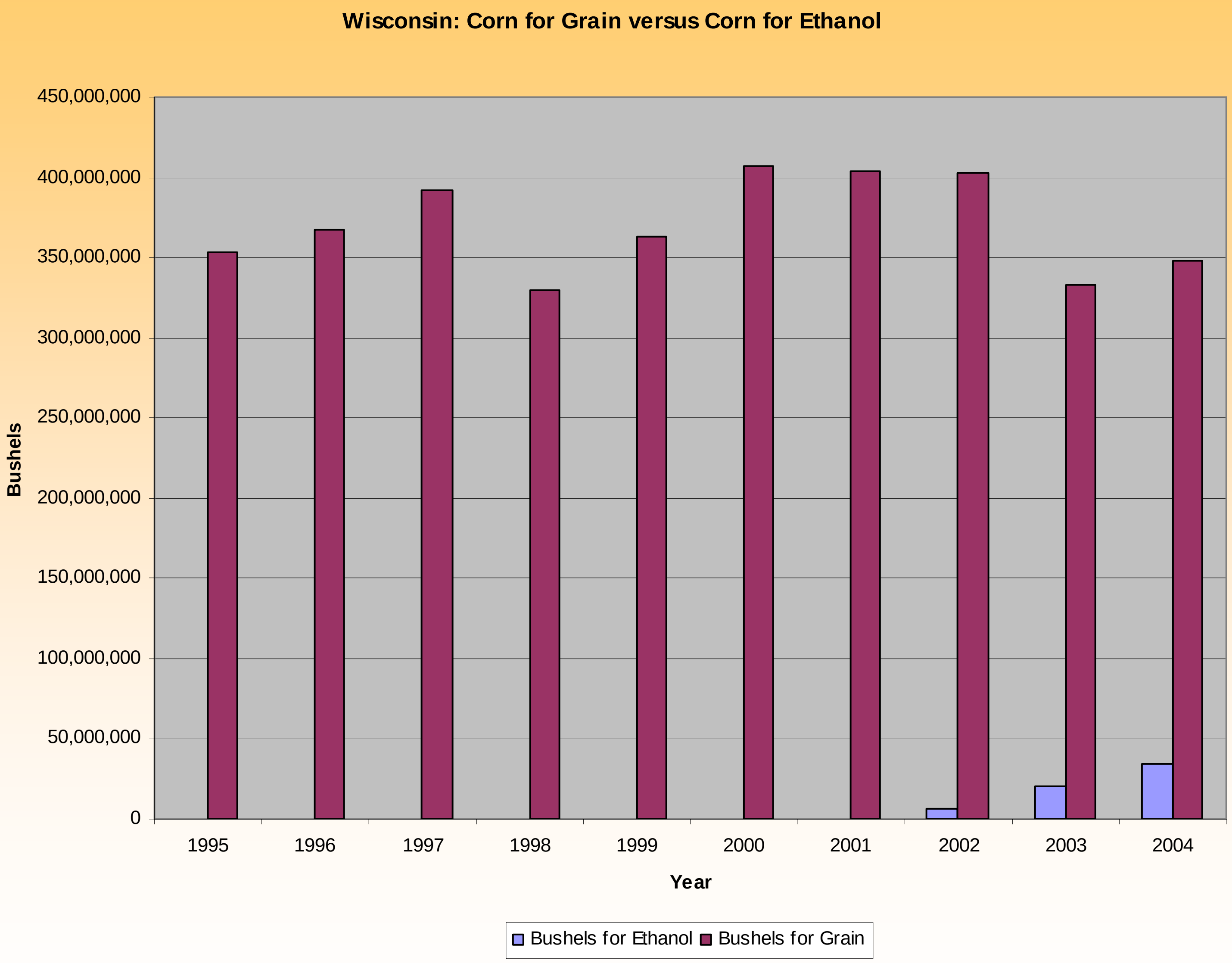
Wisconsin Cash Rents and Returns to Land



Source: USDA-ERS

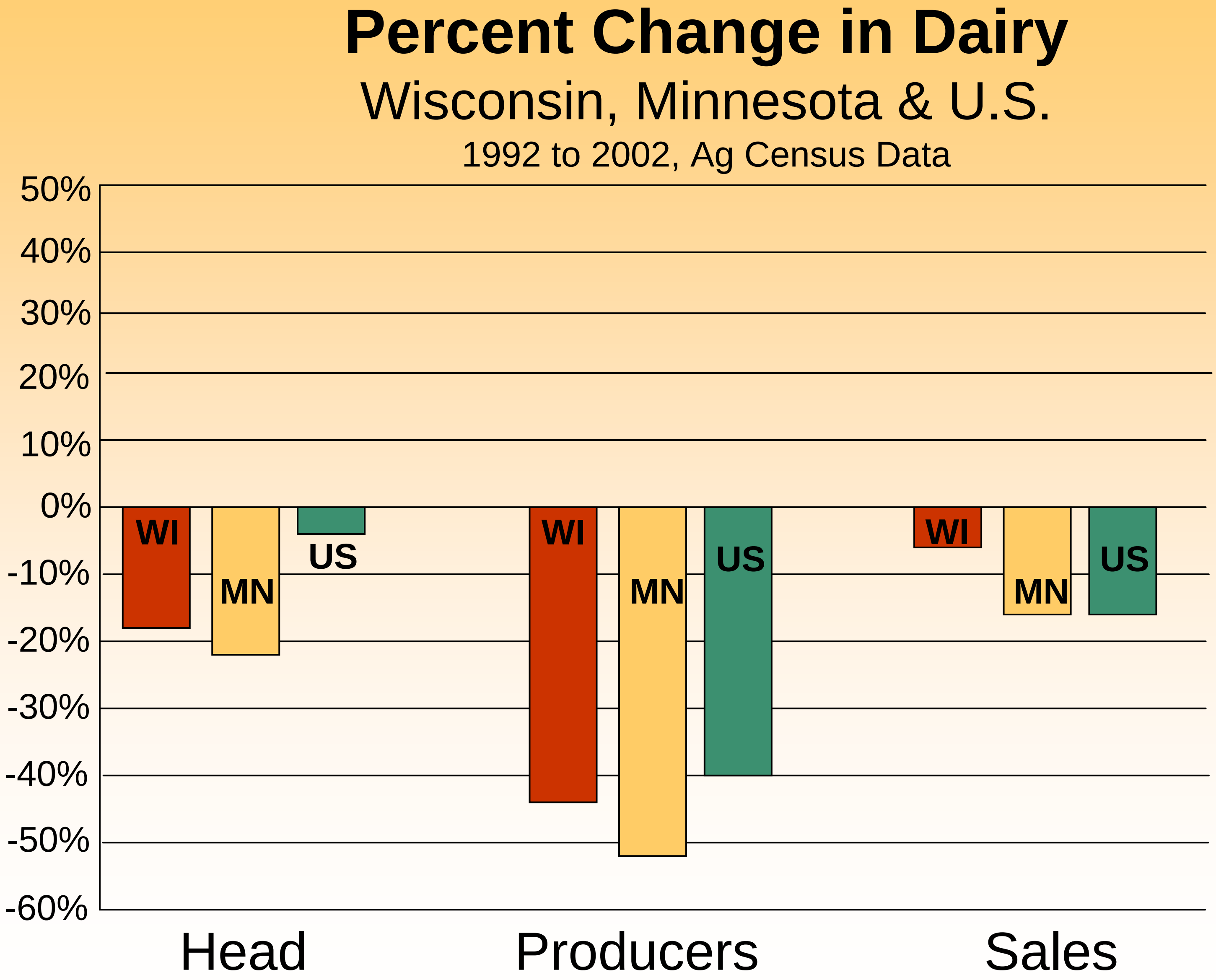
DOA Biomass Assessment





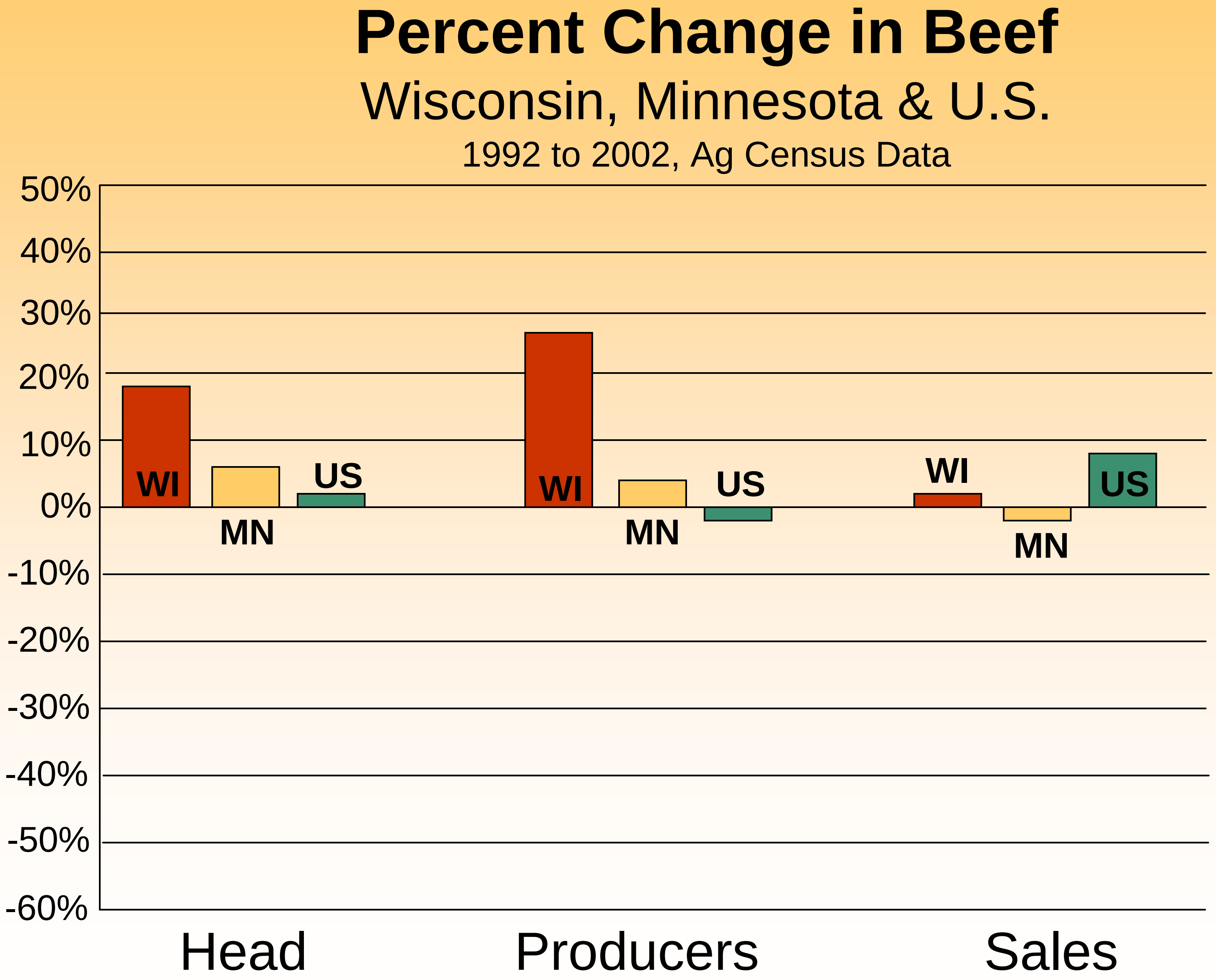
Wisconsin: Corn for Grain versus Corn for Ethanol
450,000,000
400,000,000
350,000,000
300,000,000
250,000,000
200,000,000
150,000,000
100,000,000
50,000,000
0
Bushels
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
Year
Bushels for Ethanol
Bushels for Grain

Key Trends

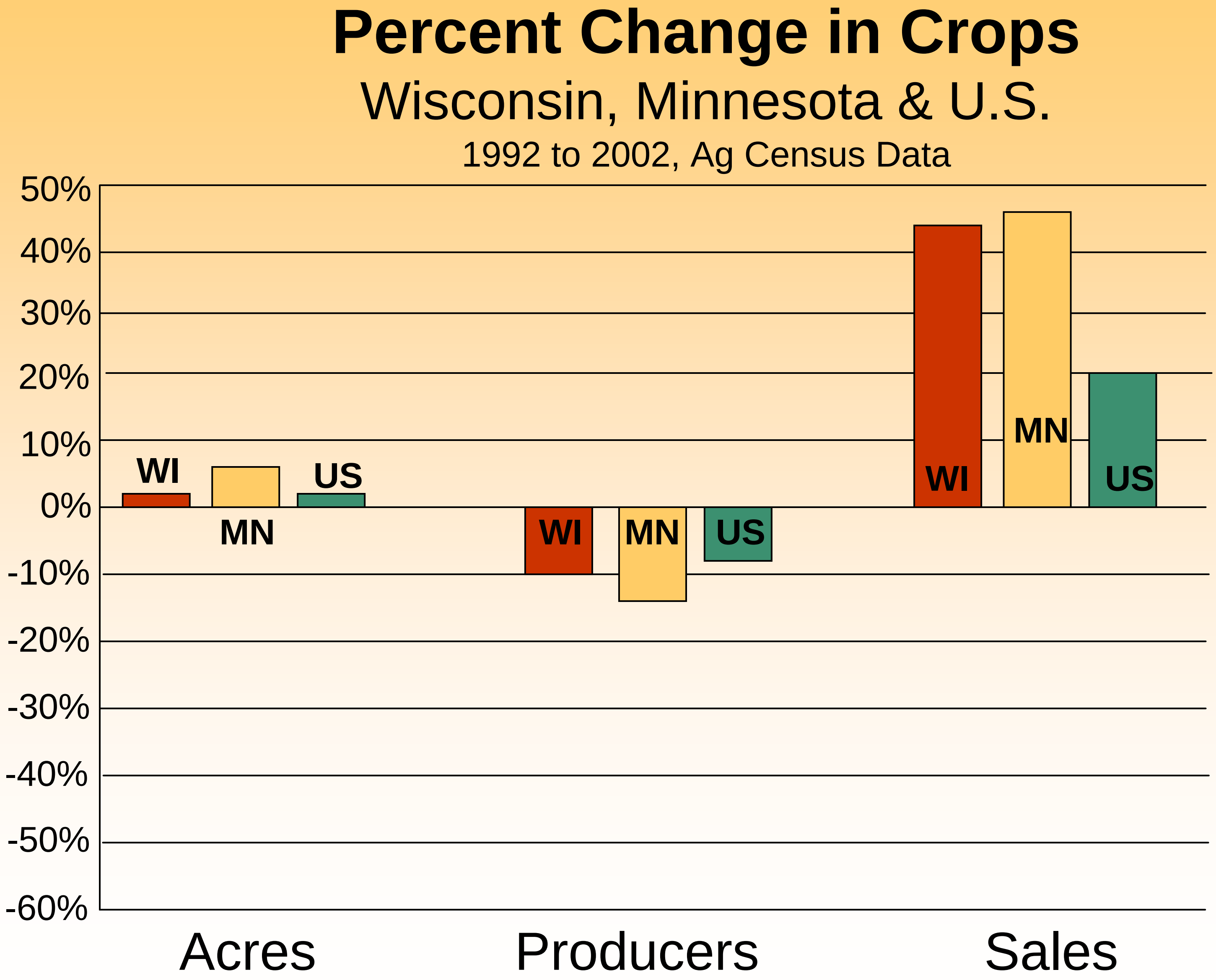


Percent Change in Dairy
Wisconsin, Minnesota & U.S.
1992 to 2002, Ag Census Data
50%
40%
30%
20%
10%
0%
-10%
-20%
-30%
-40%
-50%
-60%
WI
MN
US
WI
MN
US
WI
MN
US
Head
Producers
Sales

Key Trends


Percent Change in Beef
Wisconsin, Minnesota & U.S.
1992 to 2002, Ag Census Data
50%
40%
30%
20%
10%
0%
-10%
-20%
-30%
-40%
-50%
-60%
WI
MN
US
WI
MN
US
WI
MN
US
Head
Producers
Sales

Key Trends



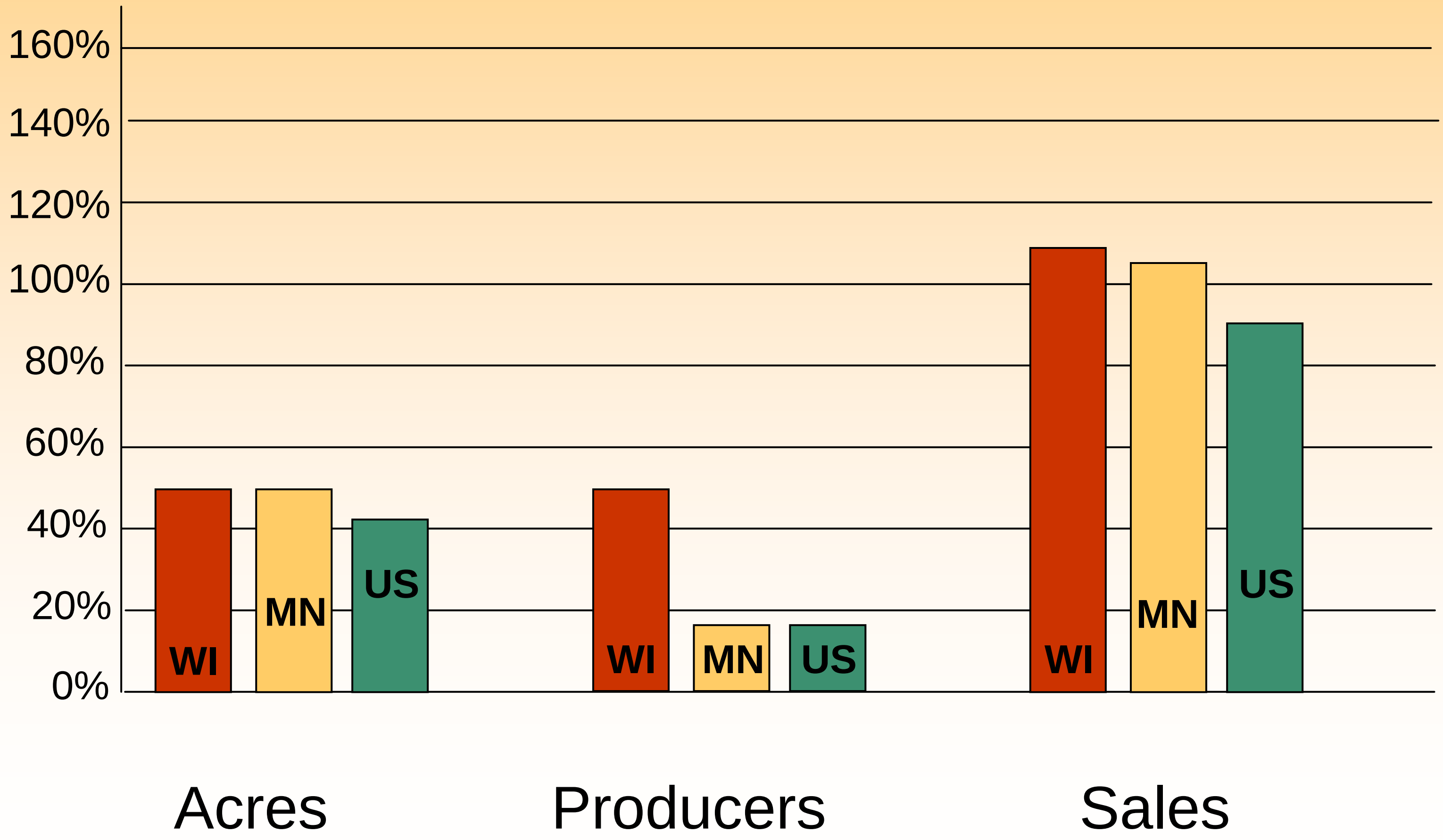
Percent Change in Crops
Wisconsin, Minnesota & U.S.
1992 to 2002, Ag Census Data
50%
40%
30%
20%
10%
0%
-10%
-20%
-30%
-40%
-50%
-60%
WI
MN
US
WI
MN
US
WI
MN
US
Acres
Producers
Sales

Key Trends

Percent Change in Horticulture

Wisconsin, Minnesota & U.S.

1992 to 2002, Ag Census Data

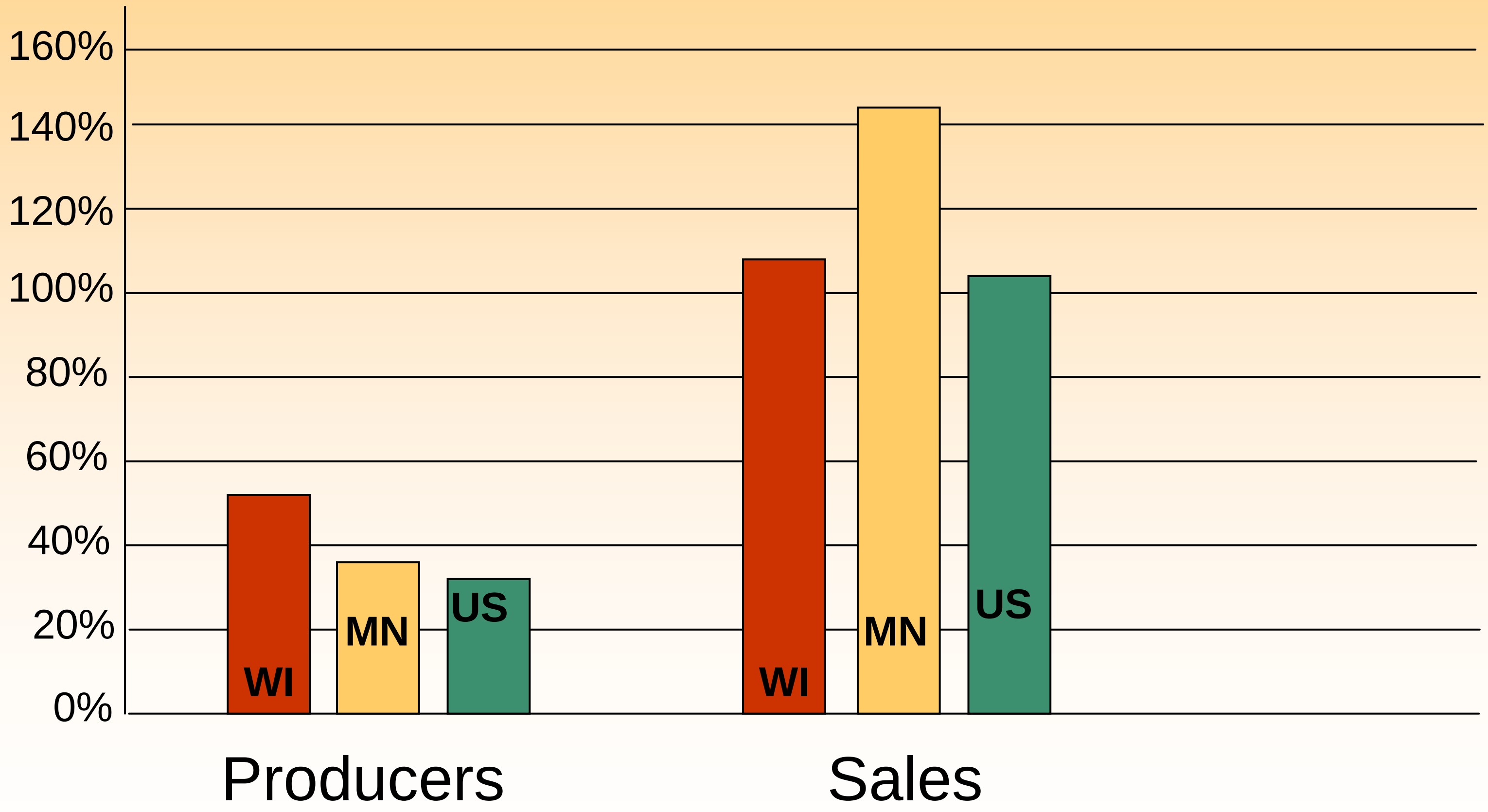


Key Trends

Percent Change in Direct Marketing

Wisconsin, Minnesota & U.S.

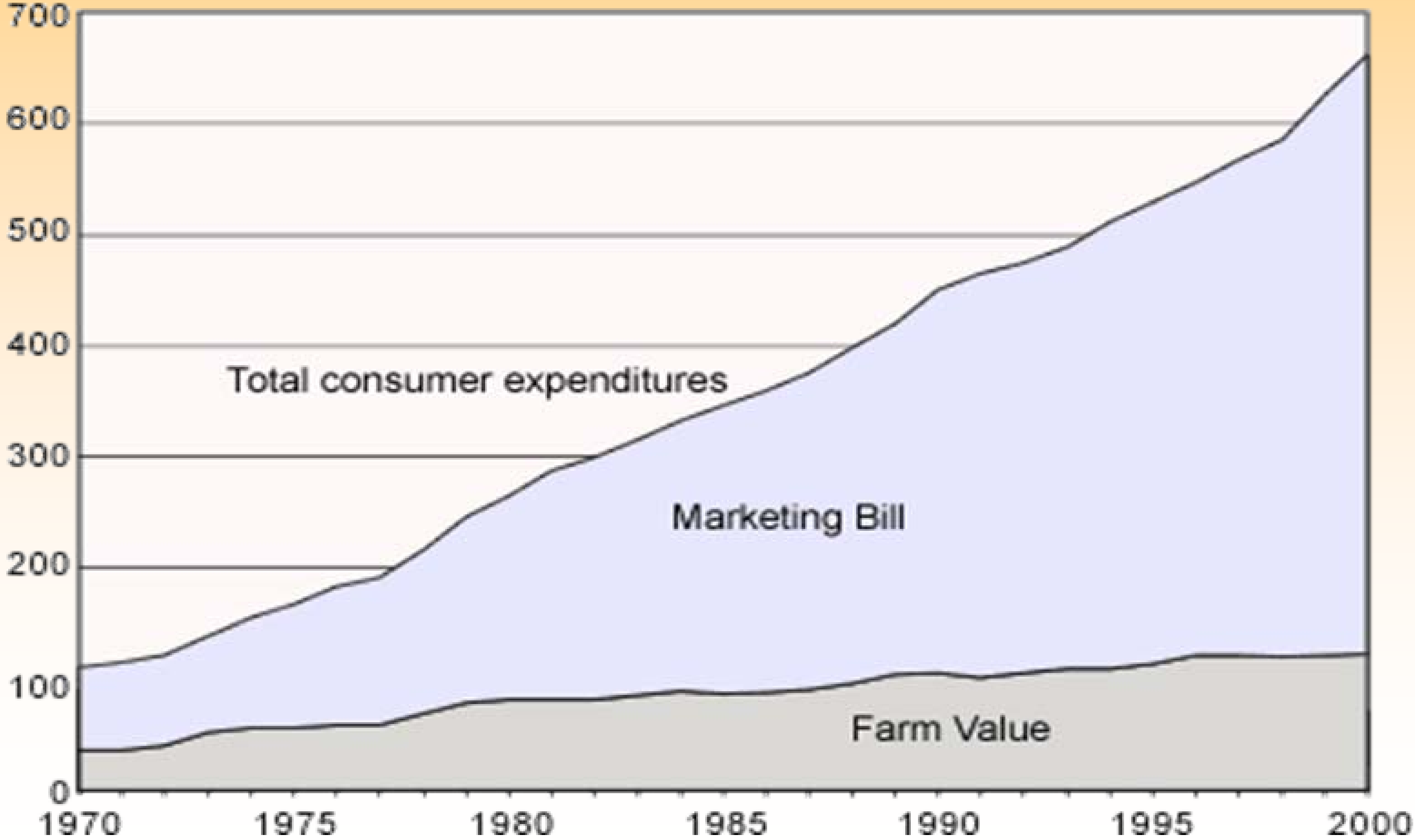
1992 to 2002, Ag Census Data

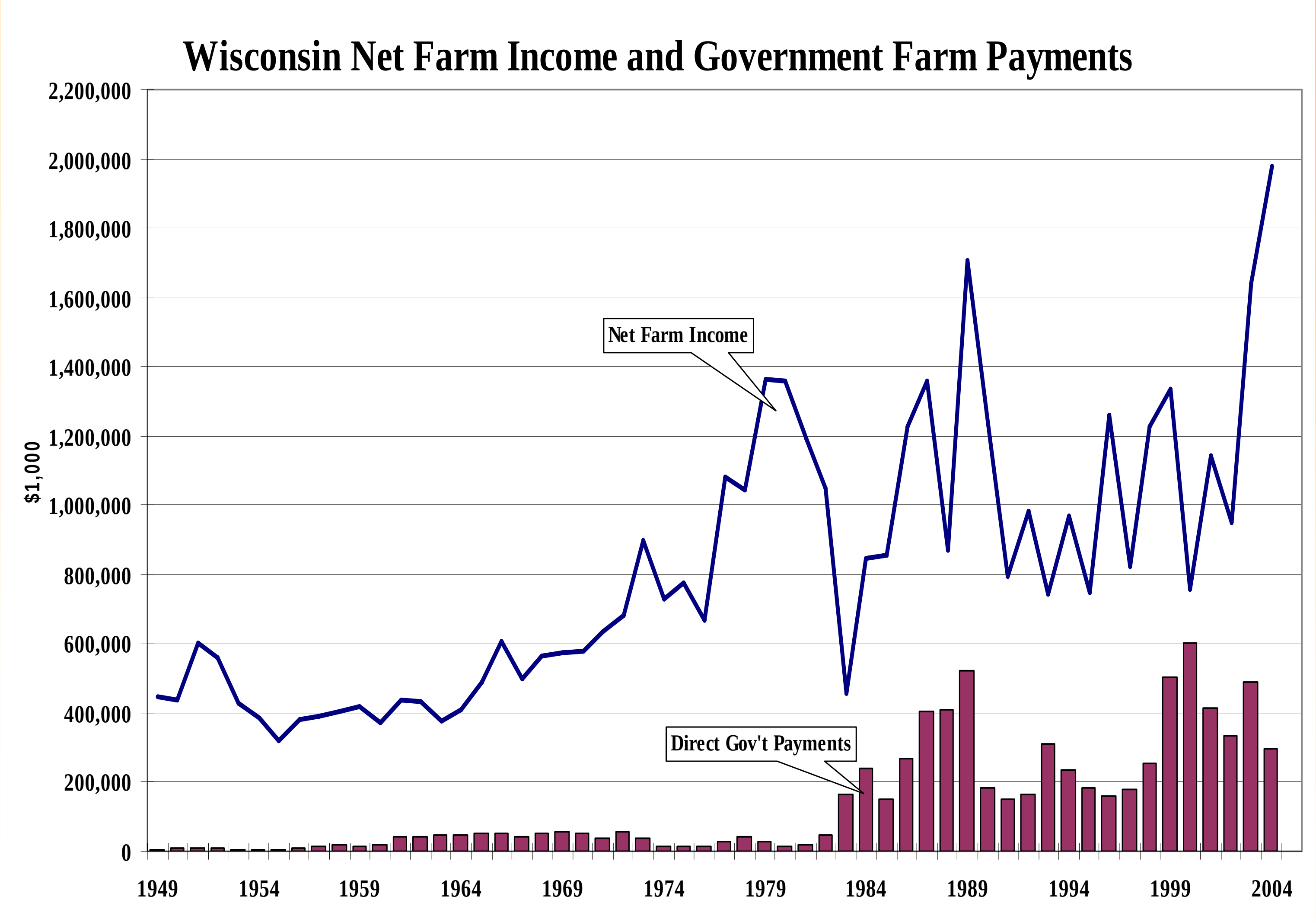


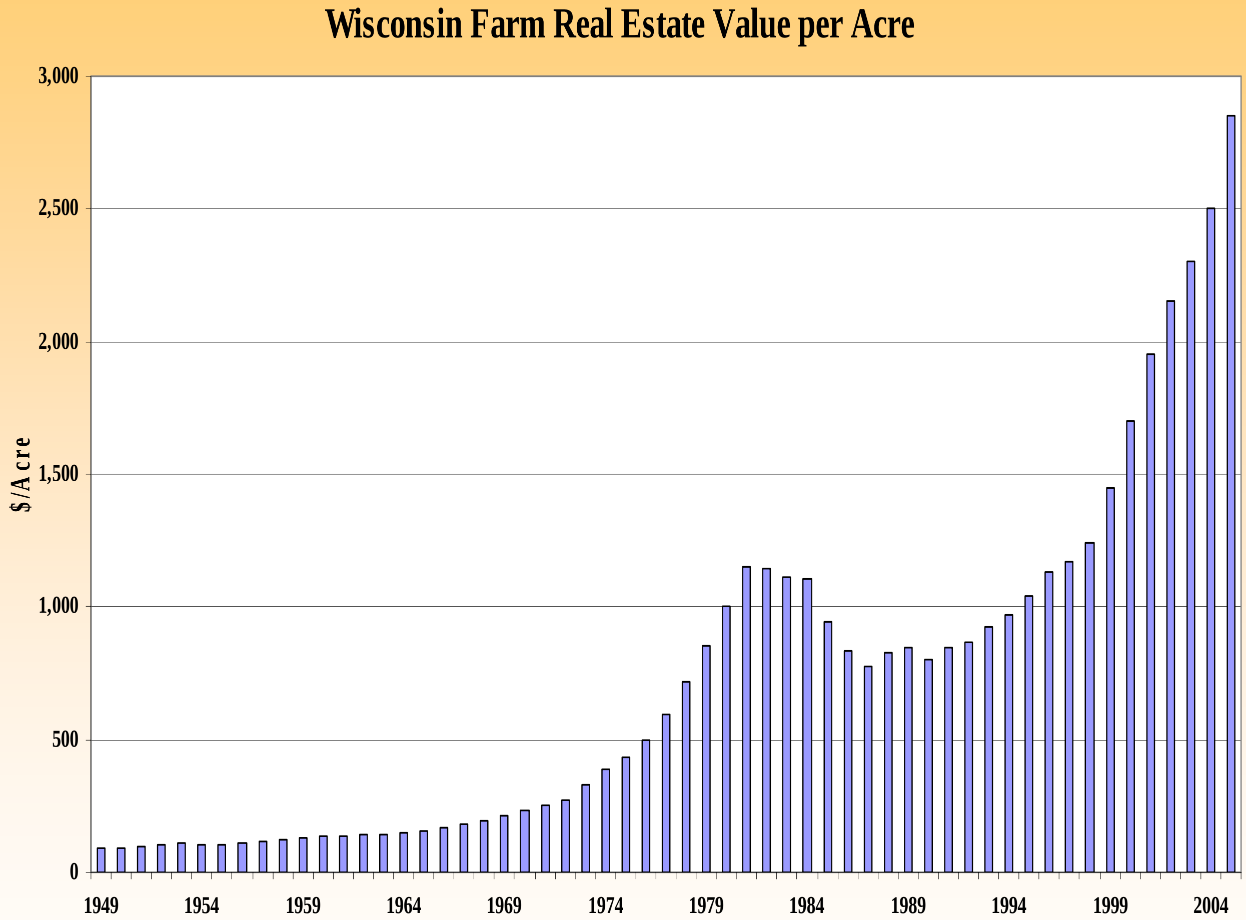
Key Trends

Trends in Food Spending, Marketing Bill, and Farm Value 1970 - 2000

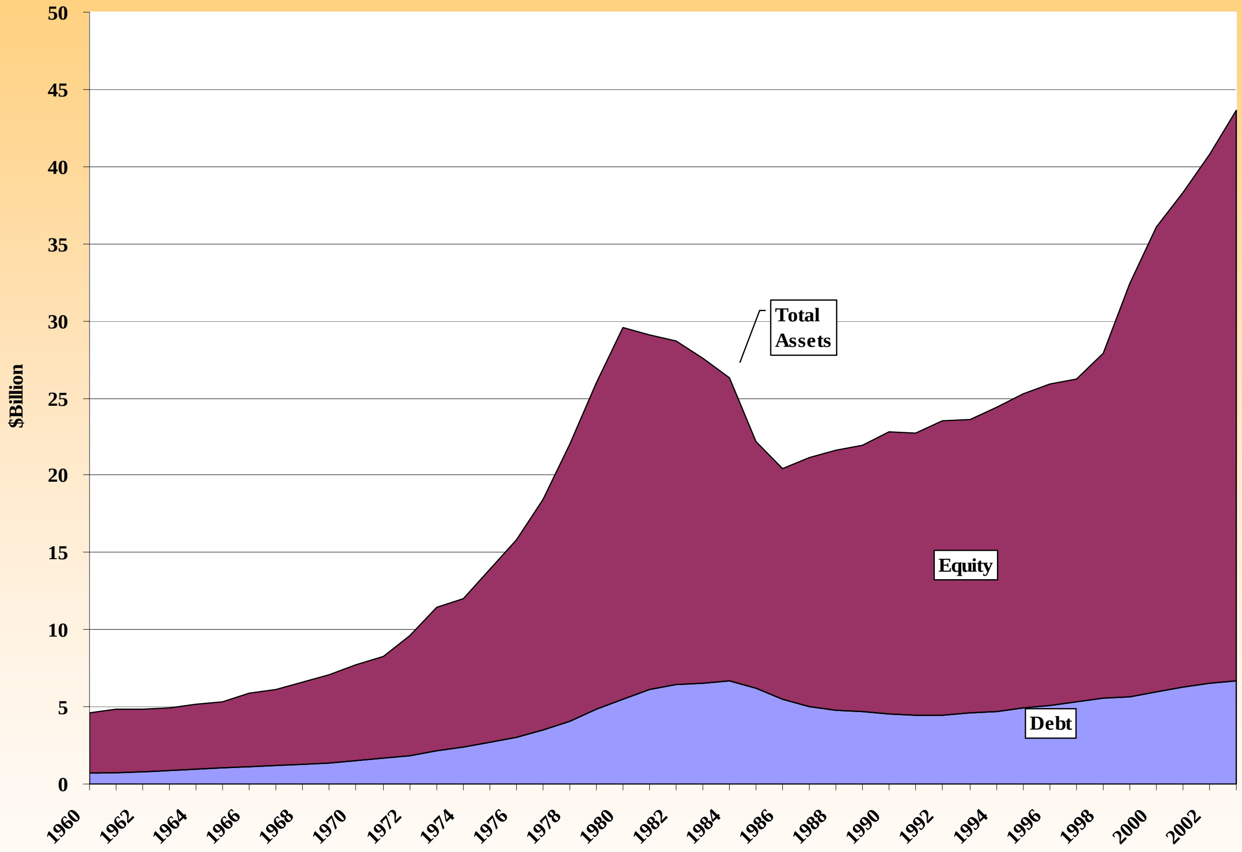
$ billion current dollars constant dollars



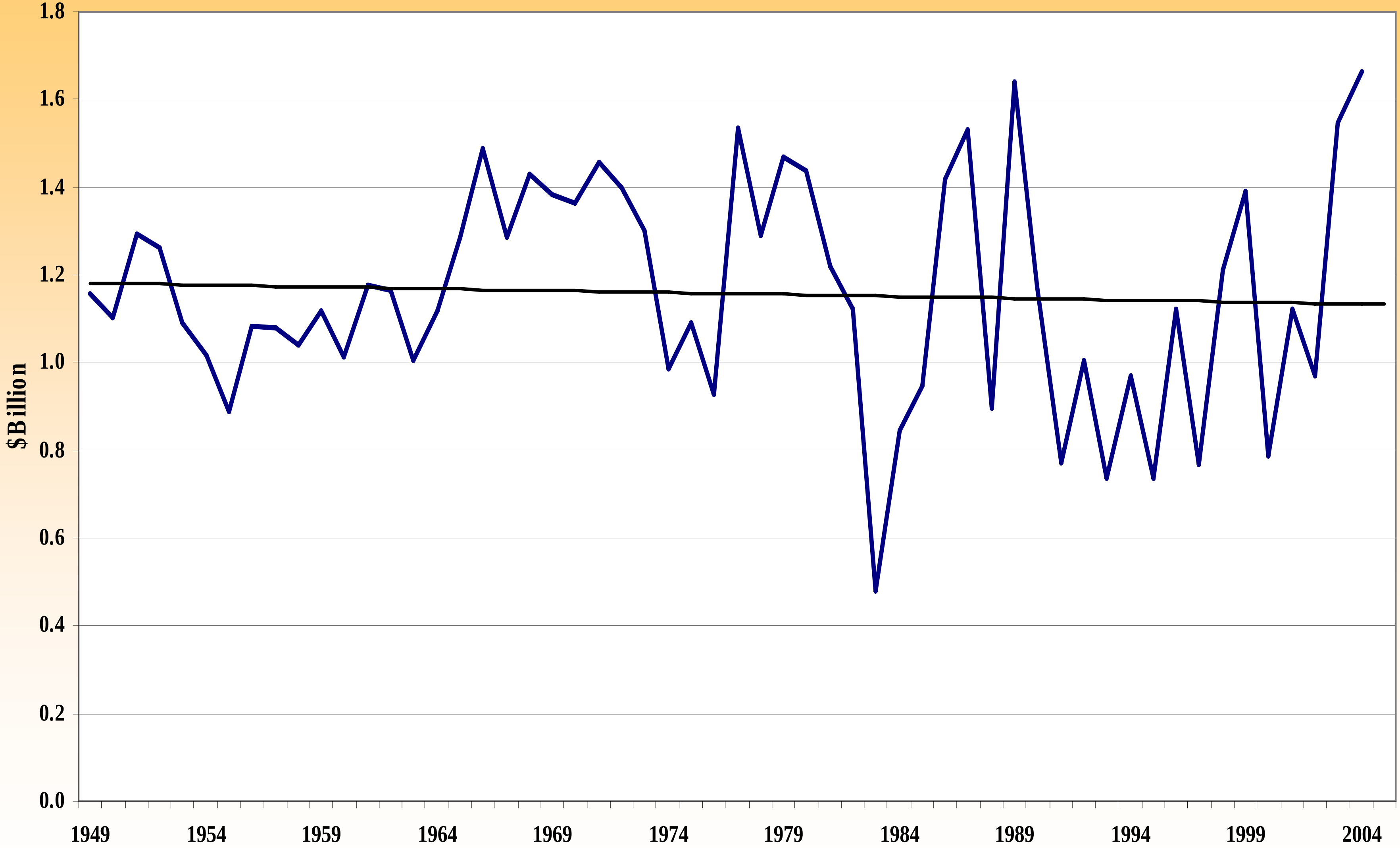

Wisconsin Net Farm Income and Government Farm Payments
$1,000
2,200,000
2,000,000
1,800,000
1,600,000
1,400,000
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
Net Farm Income
Direct Gov't Payments
1949
1954
1959
1964
1969
1974
1979
1984
1989
1994
1999
2004

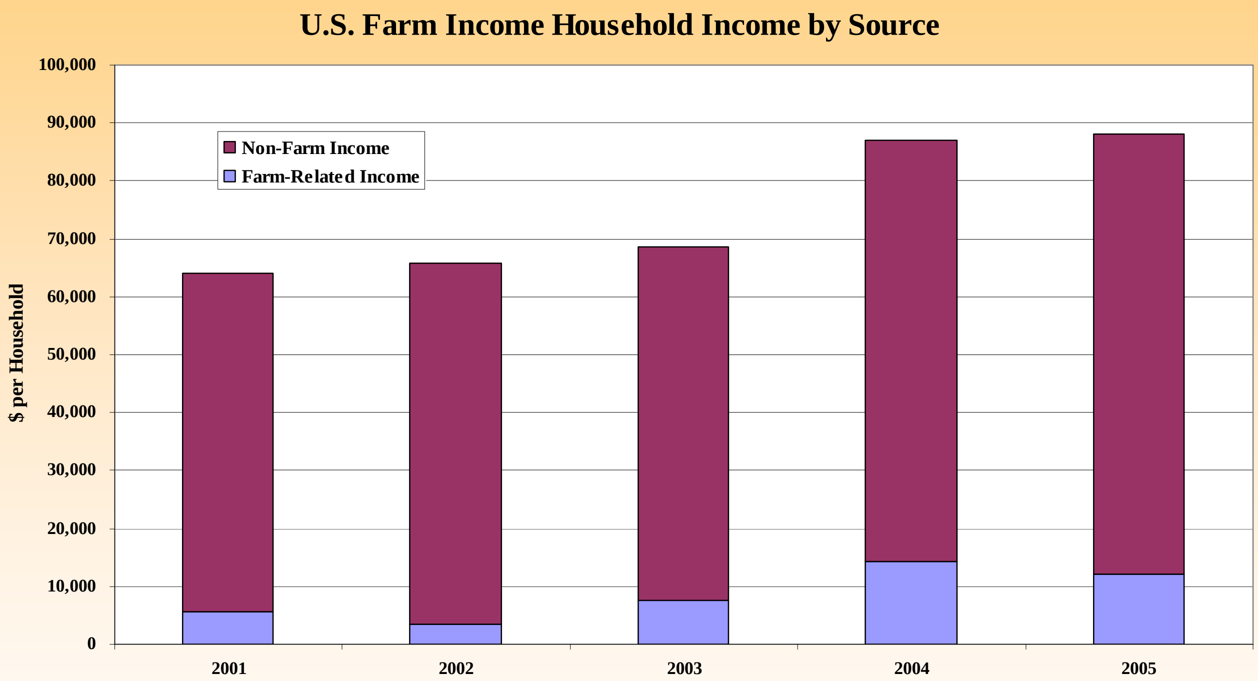

Wisconsin Farm Real Estate Value per Acre
$/Acre
3,000
2,500
2,000
1,500
1,000
500
0
1949
1954
1959
1964
1969
1974
1979
1984
1989
1994
1999
2004

Wisconsin Farm Assets and Debt

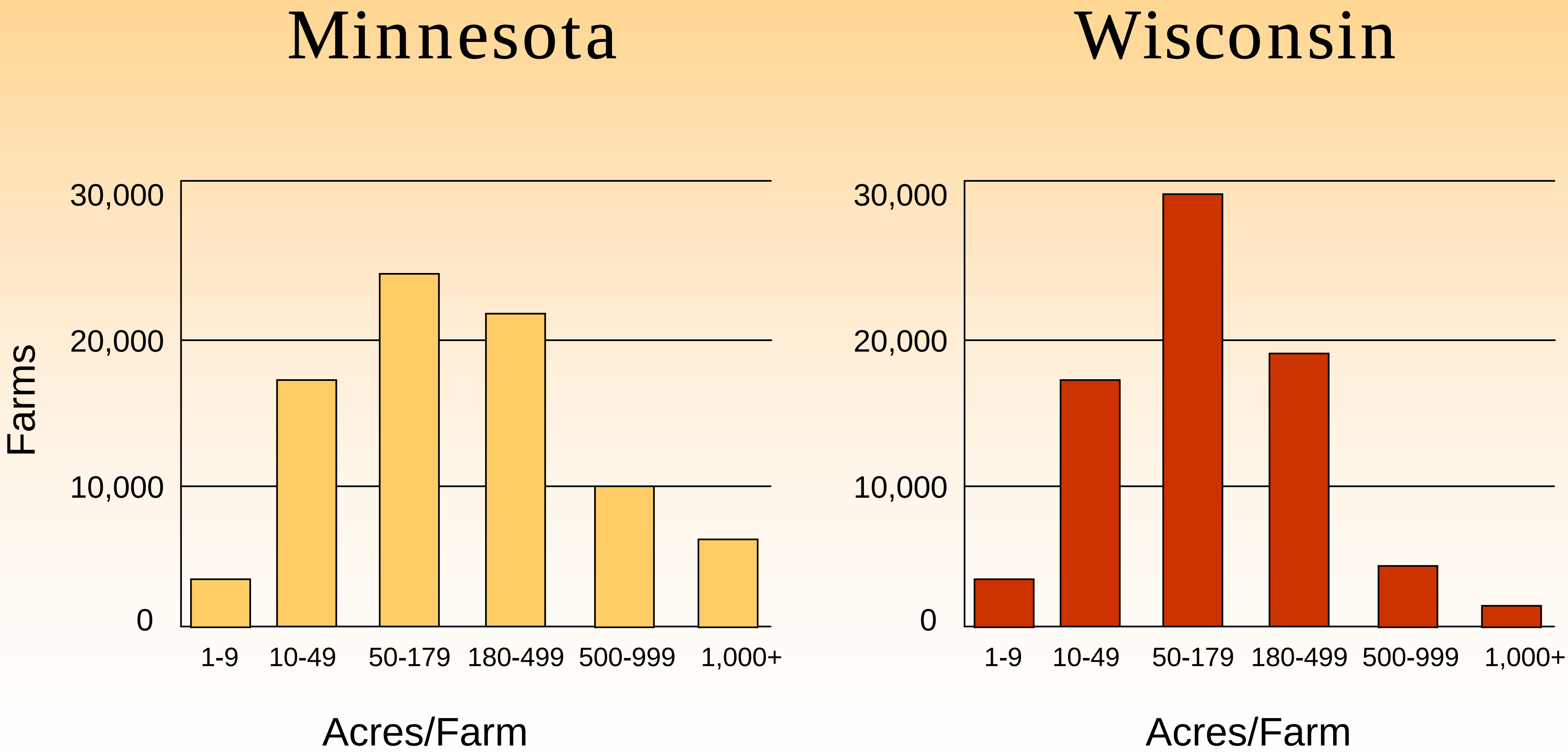


Deflated Wisconsin Net Farm Income

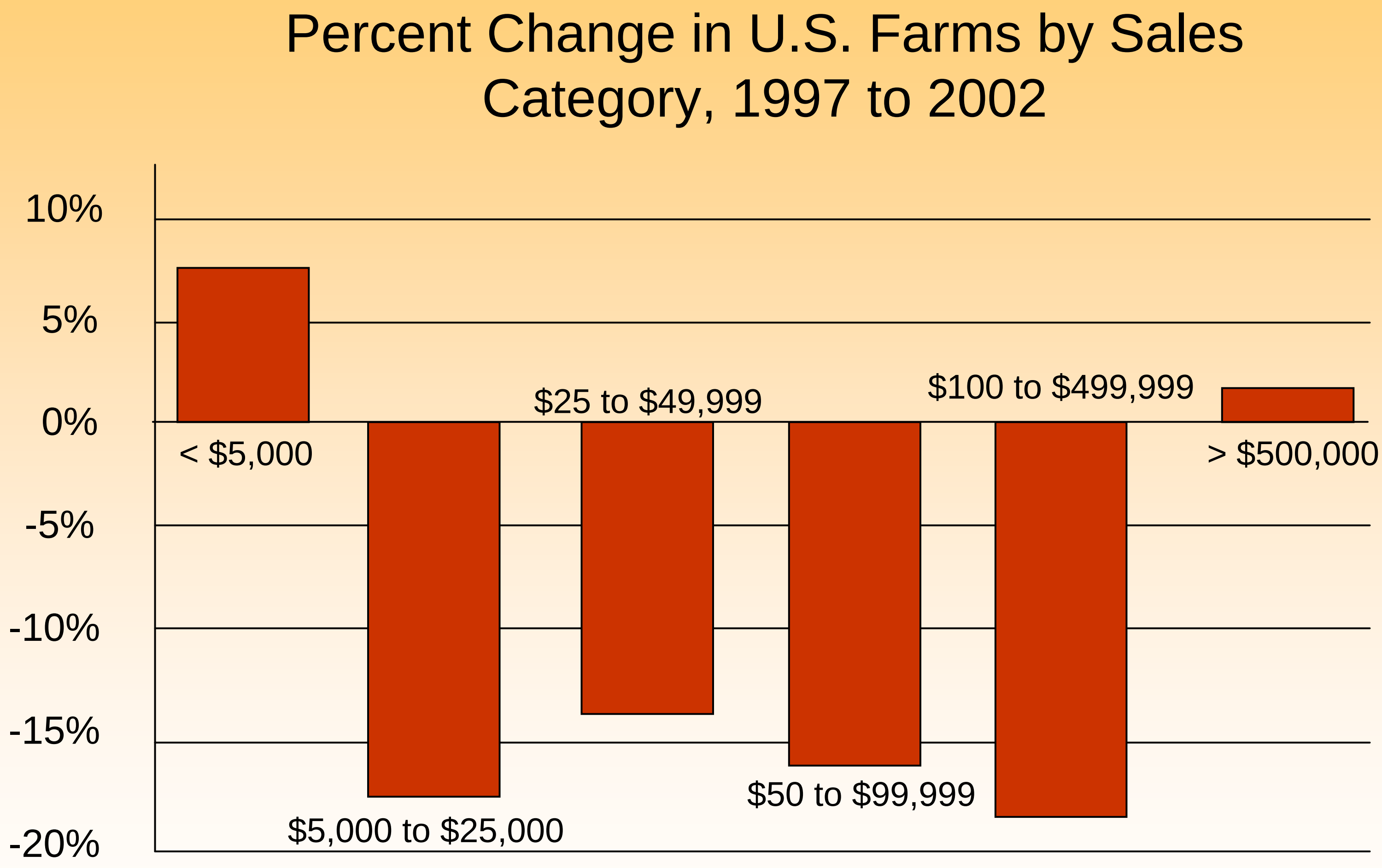



U.S. Farm Income Household Income by Source
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
$ per Household
Non-Farm Income
Farm-Related Income
2001
2002
2003
2004
2005

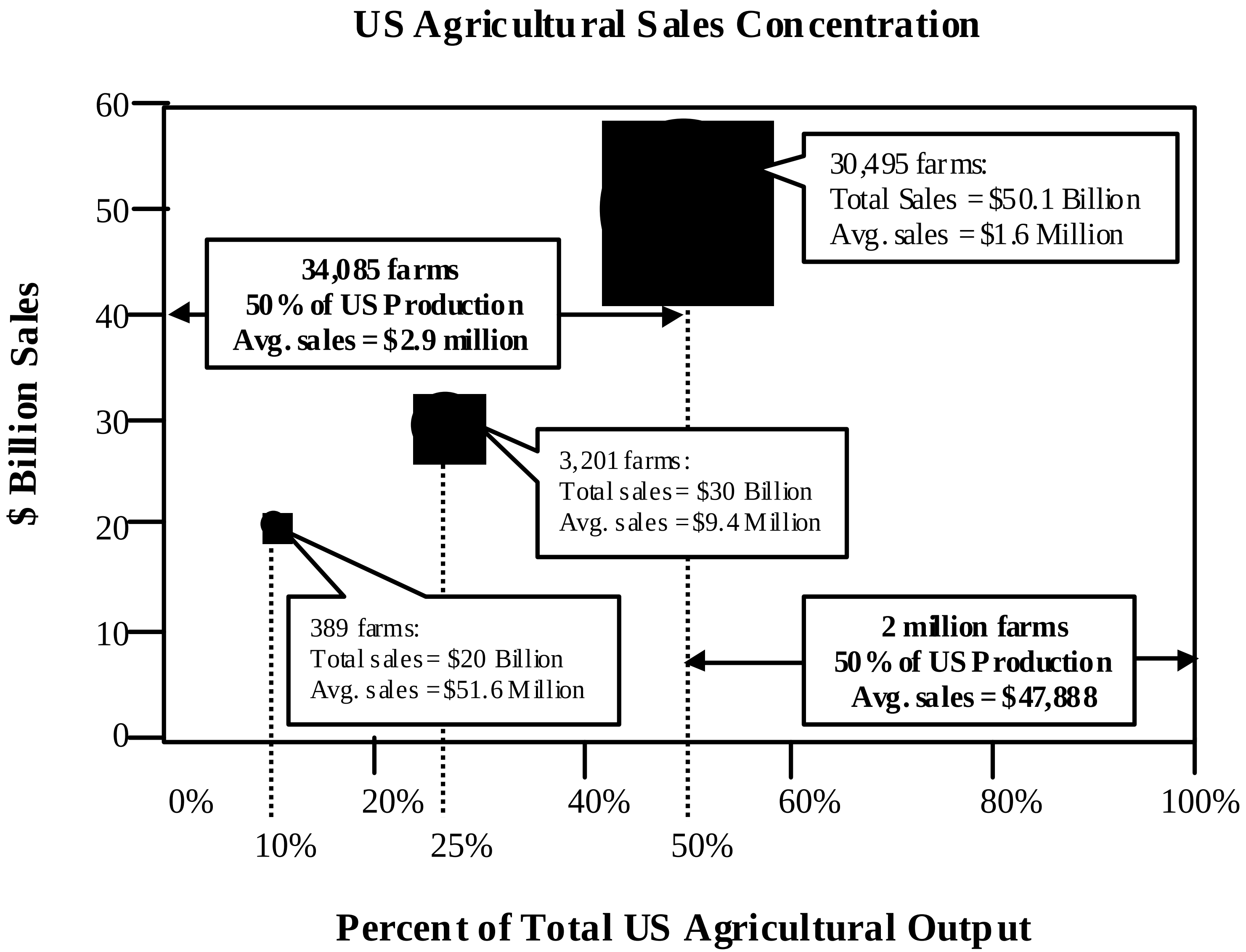
Farms by Size



Change in U.S. Farms



Key Trends



Source: Census of Agriculture

Growing Wisconsin

- Dairy
- Livestock
- BioProducts: Energy-Fuels-Chemicals-Materials
- Green Industry
- Organics and Grazing
- Aquaculture
- Direct Marketing

Growth Area: Dairy

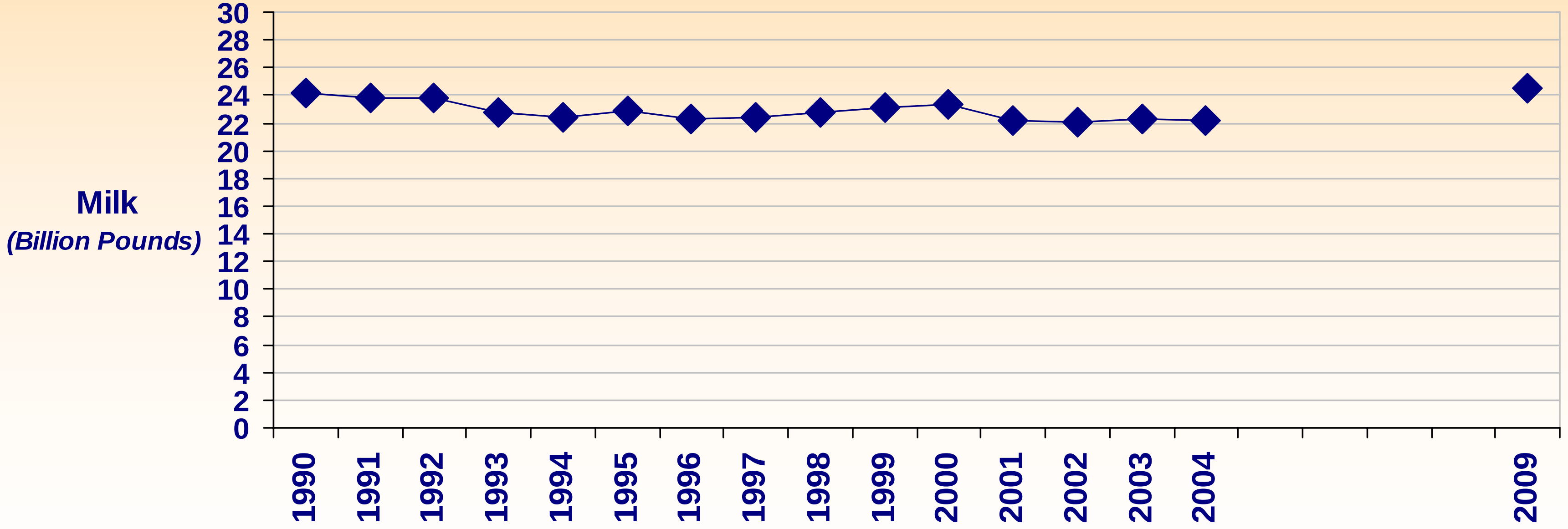
2004 Wisconsin Dairy Producer Survey

Herd Size	2004 Herds	2009 Herds (Projected)	Change 2009/2004
	Number	Number	Percent
1 - 29	2,200	1,150	-48
30 - 49	3,900	2,300	-41
50 - 99	6,500	4,700	-28
100 - 199	1,900	1,930	+2
200 - 499	700	890	+27
500 +	200	330	+65
Total	15,400	11,300	-27

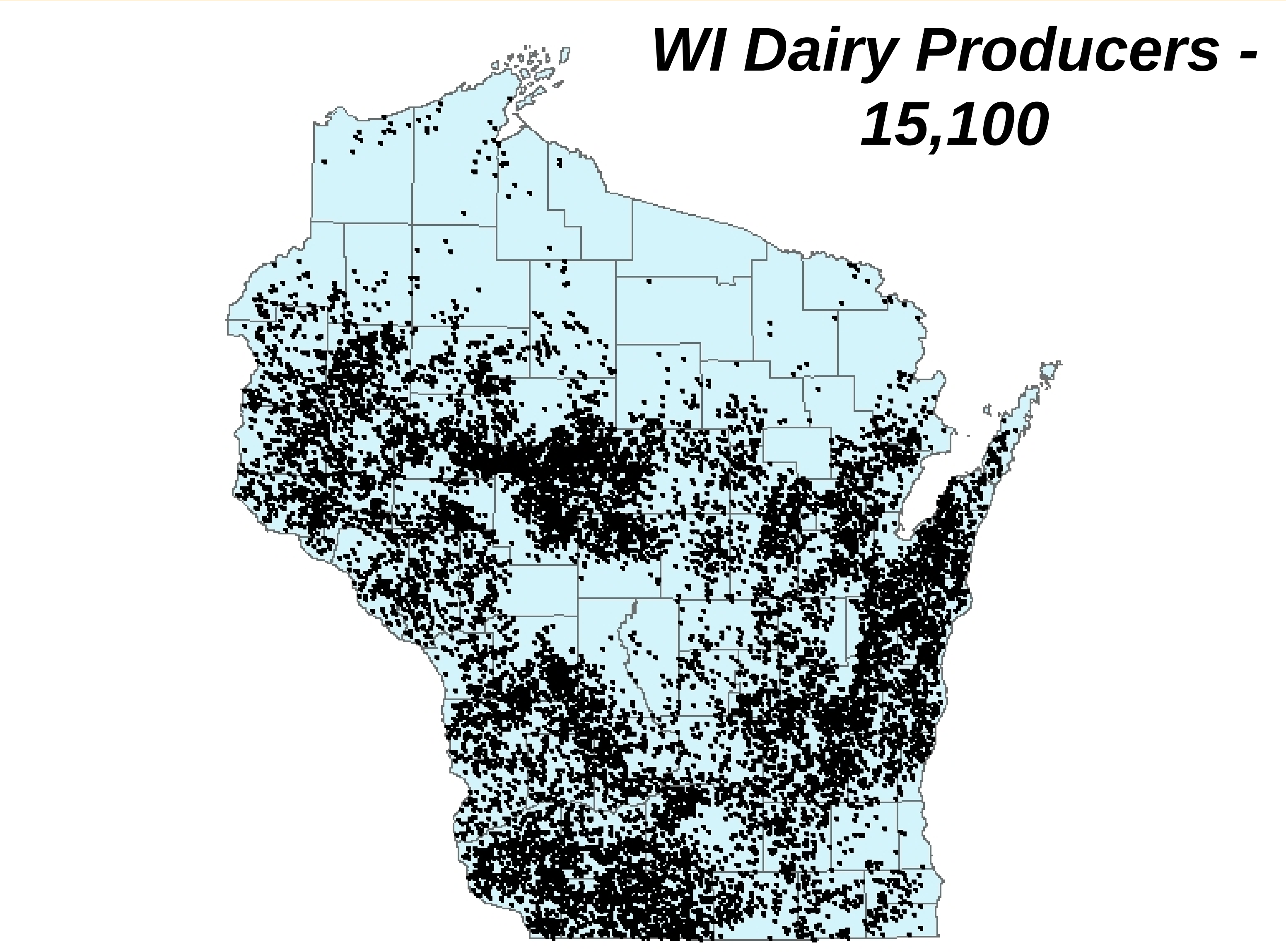
*Preliminary estimate.
Source: USDA/NASS, Farms, Land in Farms, and Livestock Operations Summary.

Growth Area: Dairy

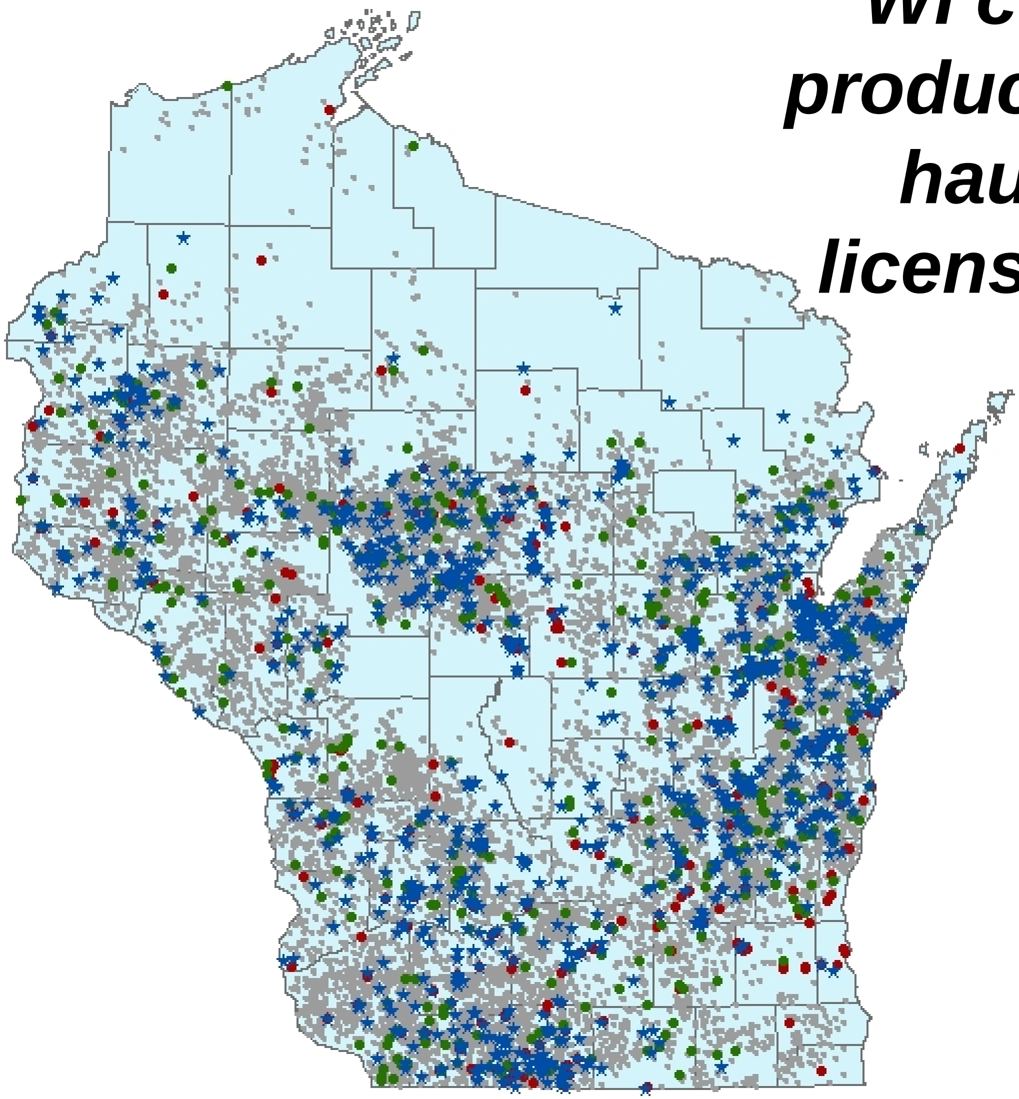
2004 Wisconsin Dairy Producer Survey –
WI Milk Production, 1990-2004 and 2009 Projection



Growth Area: Dairy



Growth Area:Dairy



WI combined-producers, plants, haulers and licensed makers

Competing at the High End

Quality
Milk Supply

Producer
Modernization

Efficient or High Value
Manufacturing

Value
Chain
Enhancement

Specialty Cheese &
Dairy Products

Dairy
Business
Innovation
Center

VADI

5-Year Outcomes

Increase milk production by 15%

Increase total economic output by $1.5 billion

Increase specialty dairy volume 25%

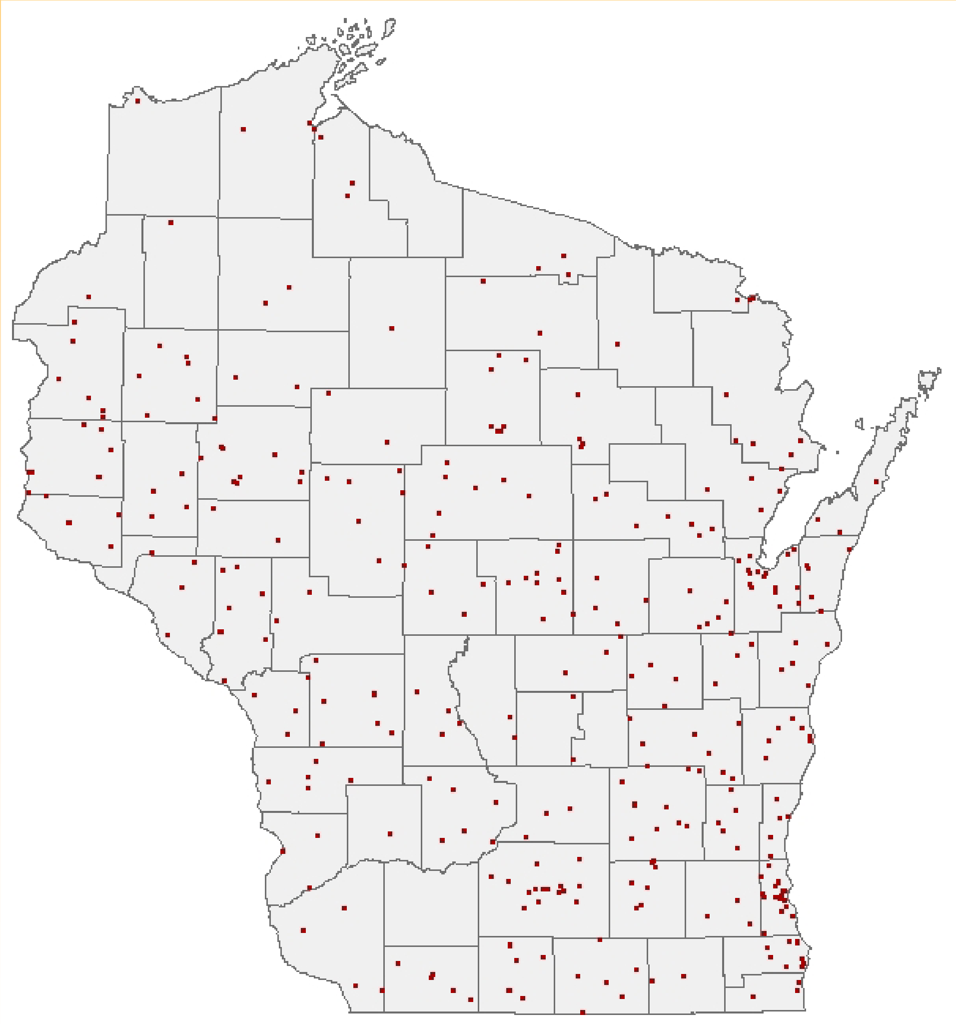
Producer Modernization

Value Chain Enhancement

Dairy Business Innovation Center

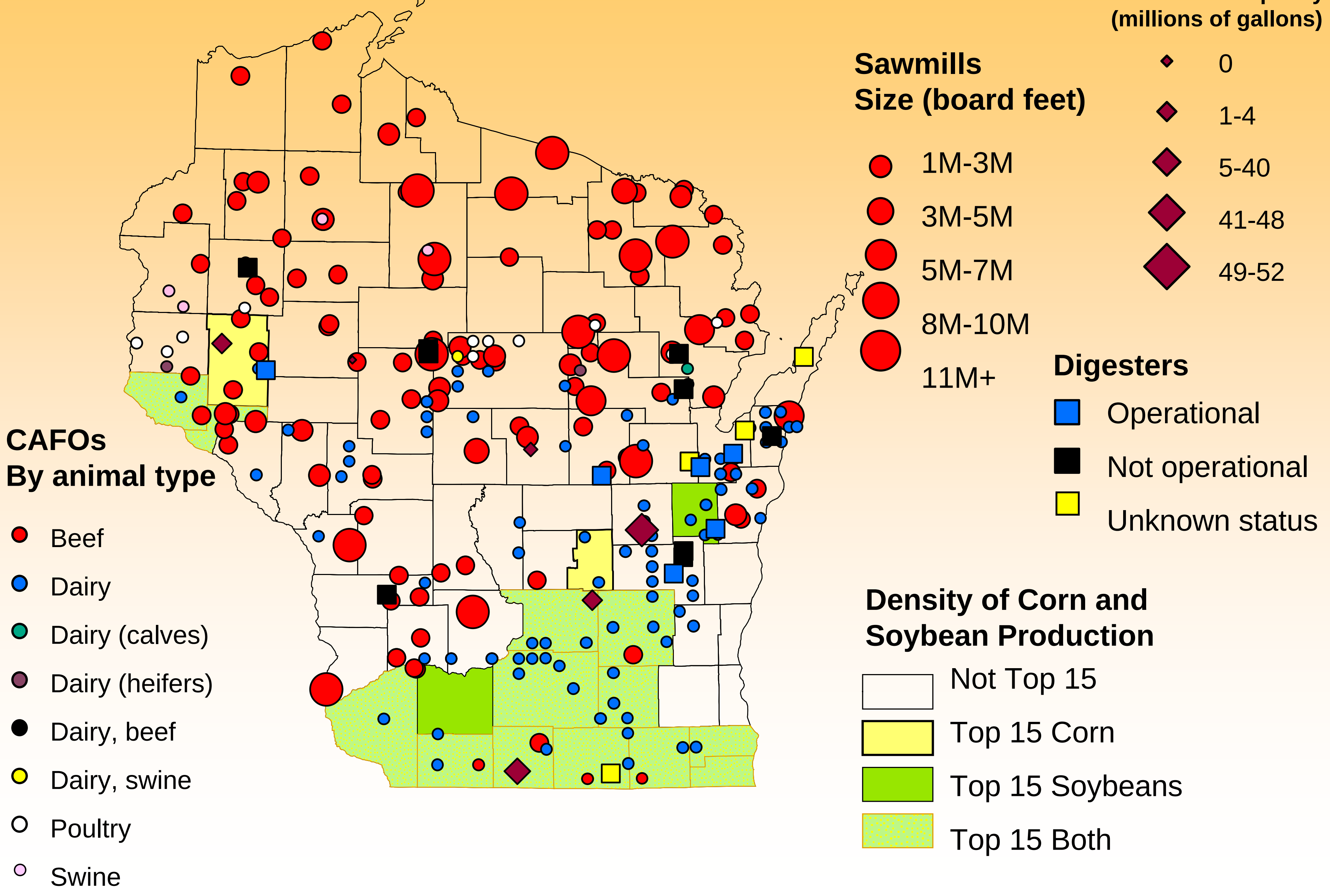
Growth Area: Livestock

Meat Plants in Wisconsin

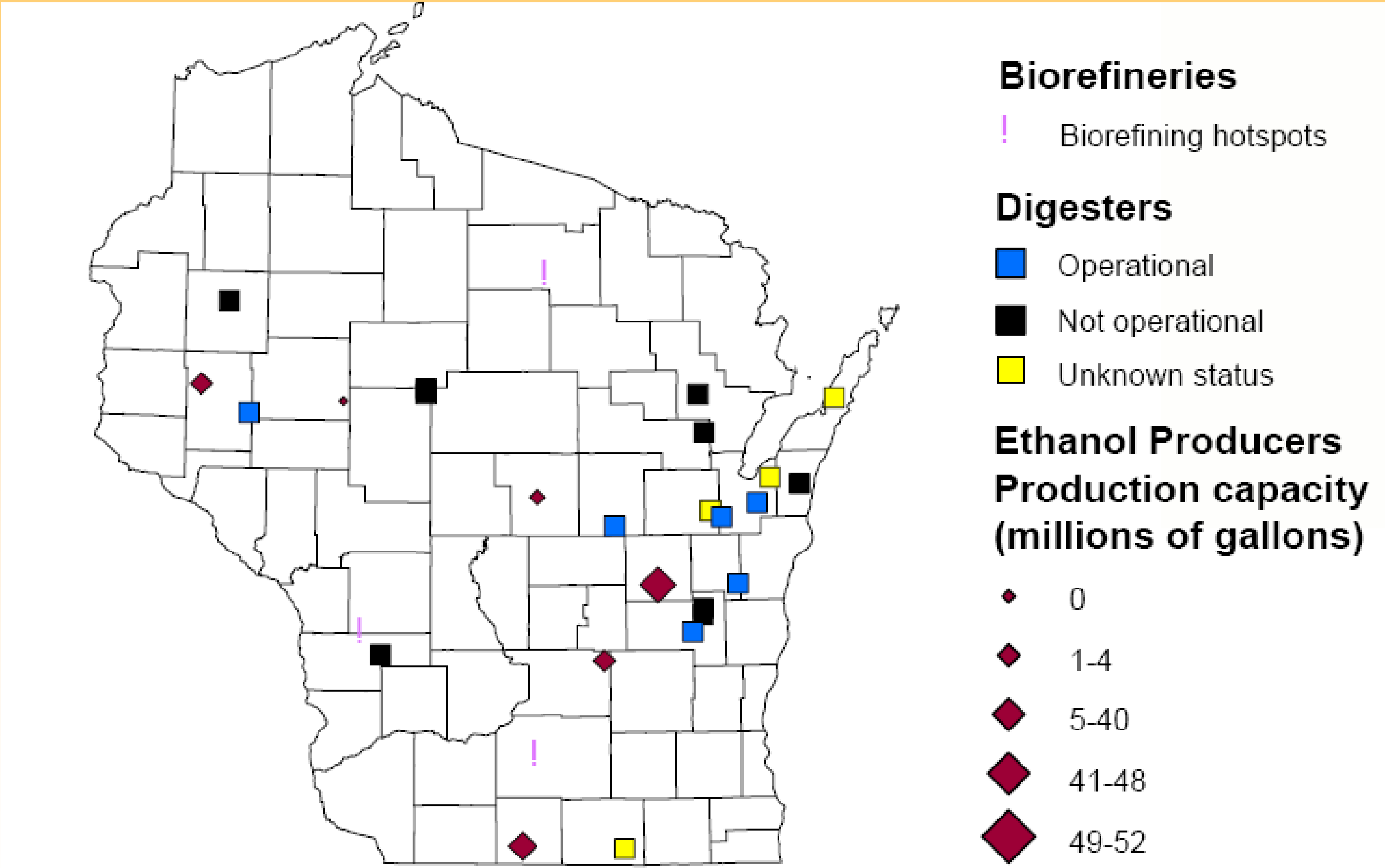


- Locations of licensed and active official meat establishments and custom meat processors

Growth Area: Bio



Growth Area: Bio



Growth Area: Bio

Cashton Greens Energy Park

On Site:

- Bio-Refinery to produce green energy and marketable products
- Bio-Diesel processing & fueling
- Two utility scale wind turbines
- Plans to use cow manure as feedstock for bio-refinery
- Tenants will be users of the energy created on site

Growth Area: Green

The Wisconsin Green Industry

- $2.7 billion industry
- Over 4,700 businesses
- Over 43,000 workers

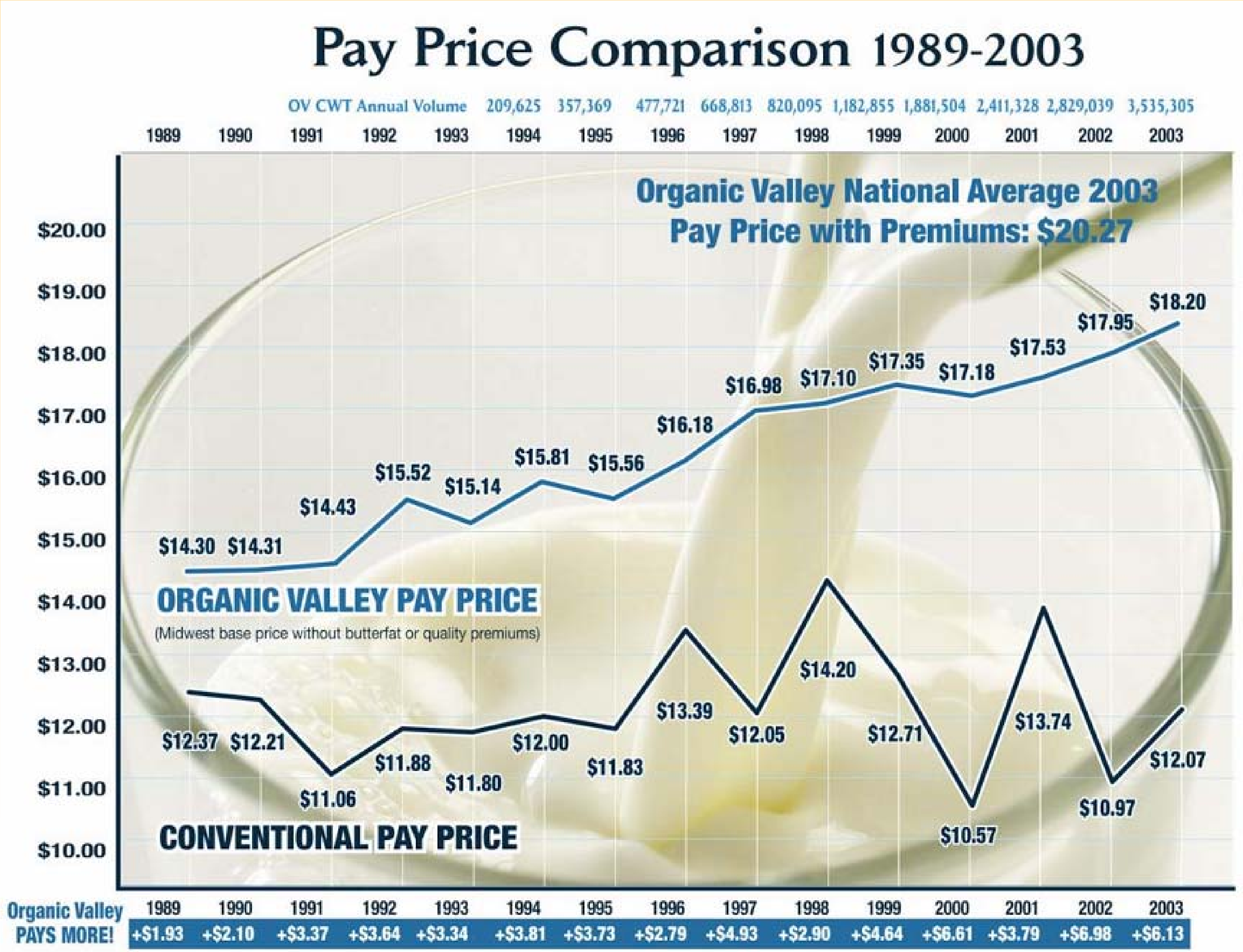
Economic Impact - 2002 Wisconsin Green Industry	
Sector	**Million ($)**
Producer - Services	819
Producer - Sales	696
Producer - Wages	471
Producer - WI Sales Taxes	53
Household - Equipment	302
Household - Purchases	118
Public/Government Expenses	149
Golf Course Expenses	98
Totals	**2,706**

Growth Area: Grazing & Organic

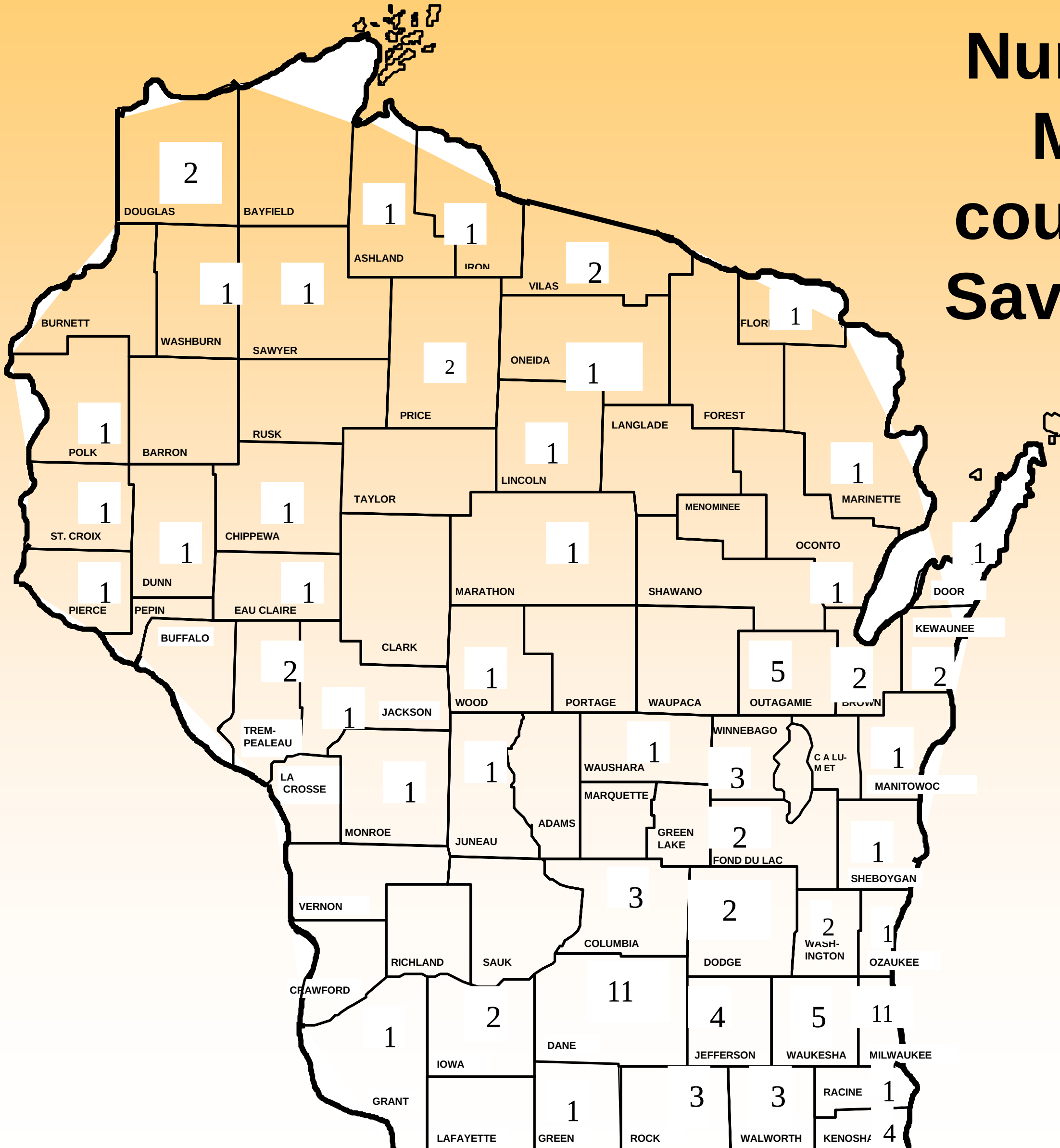
2004 Wisconsin Dairy Producer Survey – Growth in Grazing & Organic

- ⇧ 14 percent grazing farms in 2004 to 15 percent in 2009
- ⇧ 2 percent organic dairy farms to 4 percent in 2009
- ⇧ 1 percent organic grazing dairy farms to 3 percent in 2009
- ⇧ 340 organic dairy farms to 440 in 2009

Growth Area: Organic

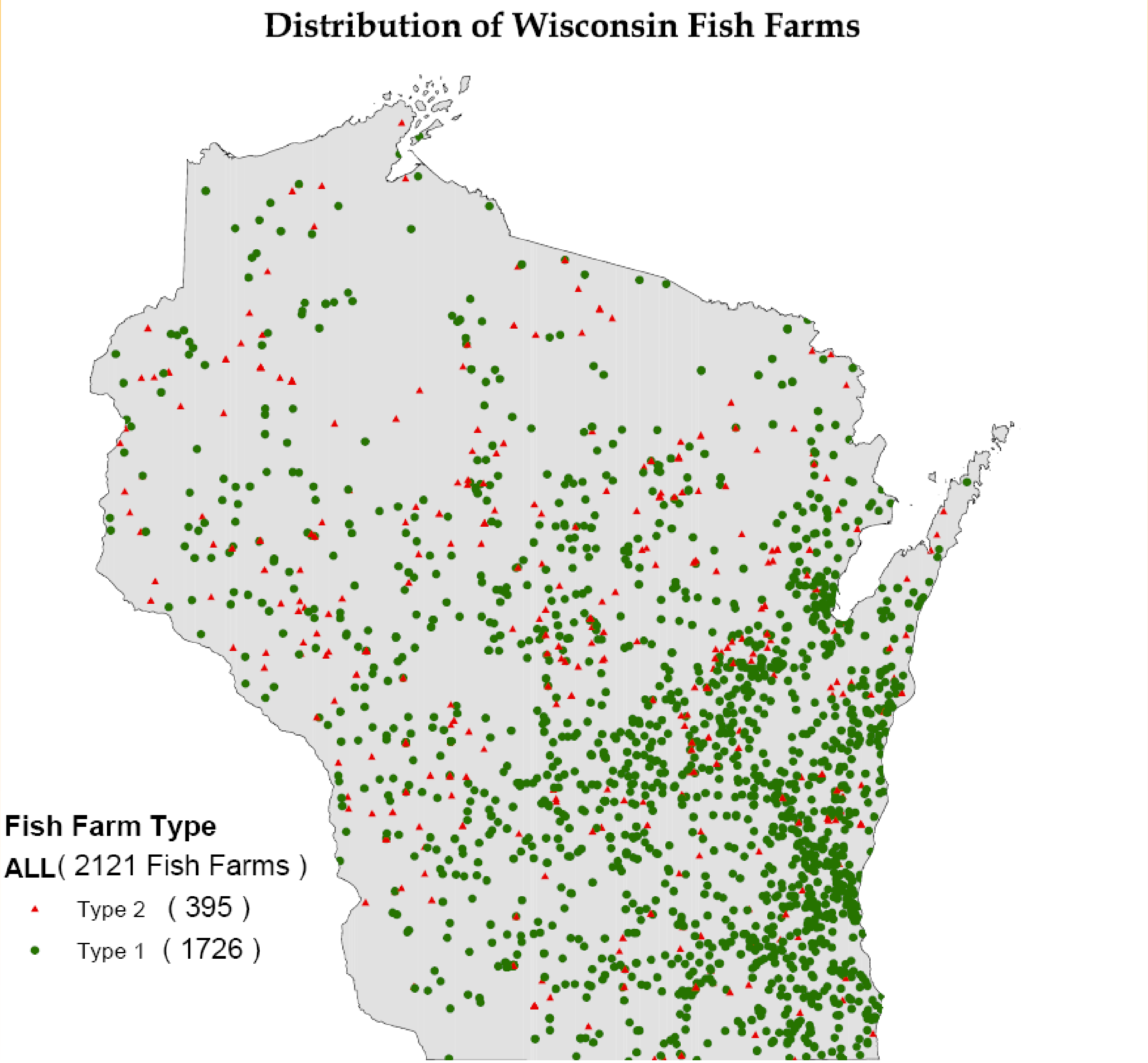


Growth Area: Direct Mktg



Number of Farmers' Markets in each county – featured on SavorWisconsin.com

Growth Area: Aquaculture



Growth Area: Value Added

Wisconsin Dairy Farmers Investing in Outside Agriculture Ventures

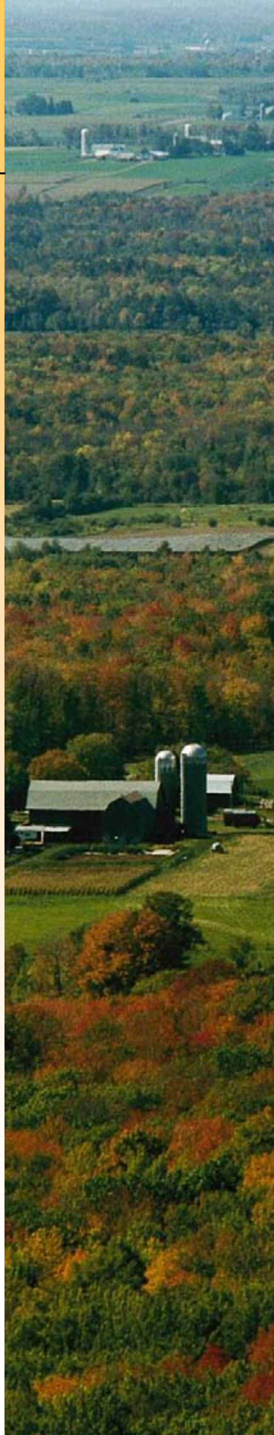
Dairy farmers were asked if they would consider making financial investments in any other agricultural ventures in the next five years.

The ventures mentioned were: ethanol plant, biogas system (anaerobic digester), specialty cheese plant, dairy ingredient plant, wind power, branded food products (labeling), ag-based industrial products, and bio- diesel plant.

The most popular ventures chosen by many farmers were: wind power, ethanol plant, specialty cheese plant, and bio-diesel plant.

Source: WASS, 2004 Dairy Producer Survey

Conclusions



- Preserving scope and scale of ag is a challenge
- Innovation and growth of existing ag base is a good start
- Competing at the high end requires good land
- Building on diversity is important
- Creating a third demand rail-BioEconomy is critical